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Inside Dope

By George F. Taubeneck

Hard to Believe
Charley D'Olive Hits a Jackpot
Invasion On the Nose
From 'Disposal' to 'Boozoo'
When They Return
Aircraft News
Look Who's Here!
No Automatic Prosperity

Hard To Believe

Classic definition of news for this newspaper, at this time, is not the old bromide: "Man Bites Dog." It is "Serviceman Seeks Job." It's hard to believe, but we have exactly that piece of news. So herewith we start off this issue with the details of our classic news story.

A. Clausen of 1408 4th Ave., Oakland 6, Calif., is a refrigeration serviceman with eight years of experience in servicing both household and commercial refrigeration installations. He is looking for a job.

He is willing to move anywhere providing the climate is dry and warm, and he will work on service, installation, or as an operator.

Wire, write, or phone at once.

Charley D'Olive Hits a Jackpot

Popular Charles D'Olive, who was long identified with the refrigeration industry as a Crosley and Stewart-Warner vice president in charge of refrigeration, seems to have hit a jackpot in making a new connection.

Mr. D'Olive is now President of the Amertype Recordgraph Corp. of 333 West 52nd St., New York City. He is also president of Frederick Hart & Co. of Poughkeepsie, N. Y. Both are subsidiaries of American Typefounders Corp.

The jackpot in this case is Amertype's sound-recording film. This film-recording method has been adopted by the Navy for shipboard use under combat conditions. This device has started off with nation wide attention, as witness:

"Most in demand of all recordings yet to reach the air," according to *Broadcasting* magazine, "is the film recording made at 12:10 a.m. June 7 by George Hicks, Blue correspondent, from the deck of an Allied warship approaching the French Coast in convoy."

The Hicks broadcast was made via an Amertype Recorder.

Just as Hicks started his description of the action along the coast, the convoy was attacked by JU88 bombers, strafing and bombing the ship. Throughout the turmoil Hicks kept up a hair-raising commentary on the action. One anti-aircraft gun beside him succeeded in bringing down one of the German attackers. The recording caught not only the sound of the firing and the plane falling into the channel, but also the talk of the gunners.

All four major networks broadcast the record simultaneously at 11:15 p.m. It has since been repeated innumerable times in response to the great listener demand, and is without doubt one of the most dramatic broadcasts of all time.

Invasion On the Nose

Invasion news makes every other type of news seem insignificant currently. And while we're on that subject, many subscribers noted that the editorial in the June 5 AIR CONDITIONING & REFRIGERATION NEWS started out:

"Smashing events are about to erupt. We are on the verge of historic explosions. Our entire situation can change almost before we know it."

Next day, June 6, came the Invasion. Incidentally we suggest that you go back and re-read that editorial.

Air Conditioning & REFRIGERATION

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Technical Governmental NEWS

PUBLIC LIBRARY

9 1944 Written To Be
Read on Arrival'

Issued Every Monday
at Detroit, Michigan

JUNE 19, 1944

Vol. 42, No. 8, Serial No. 796
Established 1926.

1942 Refrigerators Far From Ideal, Ewell Tells A.S.R.E.

PITTSBURGH — Declaring that many of the 1942 household mechanical refrigerators do not maintain the optimum temperature and humidity conditions for proper preservation of food, Dr. Arthur W. Ewell, consultant for Westinghouse Electric & Mfg. Co. and physics professor at Worcester Polytechnic Institute, told A.S.R.E. members at the spring meeting held here recently that ideal conditions called for a cabinet temperature of about 37° F., relative humidity between 85% and 95%, and the installation of a germicidal lamp.

Minimum temperatures of about 40° F. are obtained with many pre-war electric, and some modern ice refrigerators, but because of door openings or high outside temperatures this minimum temperature is seldom achieved, said Dr. Ewell, who has been conducting tests for some time on food preservation in household boxes.

"Furthermore, the temperature varies several degrees between different parts of the refrigerator," he pointed out. "There is also a temperature fluctuation of greater magnitude throughout the cabinet during the cycle of many 1942 electric re-

frigerators. A fluctuating temperature is more injurious to food than is a constant temperature a few degrees higher than the average of the fluctuating temperatures," he stated.

When relative humidity drops to 75% or lower in a refrigerator, also pointed out Dr. Ewell, the moisture at a food surface evaporates rapidly, deteriorating the surface color of many foods and generally impairing surface juiciness, flavor, and texture.

"Most of the household electric refrigerators of 1942 and earlier, had, on account of the relatively small area of refrigerated surface, mean humidities of only about 60%," said Dr. Ewell. "In order to secure a temperature of 40° it was necessary for this restricted surface to have, at the end of the 'on' part of the cycle, a temperature far below the freezing point of water. As a result, the moisture in the cabinet was frozen out upon the limited refrigerated area and despite replacement by the water vapor evaporating from the food, the mean humidity in the box fell from about 85% at the beginning of the 'on' period to about 50%.

(Concluded on Page 5, Column 1)

Utilities Schedule Drive to Electrify Home Completely

CHICAGO — Complete home electrification, including year-around air conditioning, and labor-saving kitchen and laundry equipment, will be the aim of utilities after the war, but there'll be plenty of competition from the gas utilities in this modernization program, it was forecast at a recent meeting of the Public Utilities Advertising Association held here.

The electrical equipment and manufacturing industries are planning an advertising program to promote such electrification, and the campaign will feature air conditioning systems controlled by an outdoor electronic device, revealed W. T. Reace, vice president of Commonwealth Edison Co. of Chicago.

Market of 1,000,000 houses a year for 10 years after the war was predicted by C. V. Sorenson of the Northern Indiana Public Service Co.

Some 8,000,000 gas ranges will be replaced with modern models after the war; gas water heaters will be purchased by 5,000,000, and 2,000,000 will want gas refrigerators, he said.

Jobbers Vote Against Membership Changes

CHICAGO — Two proposed amendments to the by-laws of the National Refrigeration Supply Jobbers Association which would have made some changes in the qualifications for membership have apparently been voted down in a letter ballot by the membership.

The ballots are 56 not approving and 37 approving on the amendment of Paragraph (b) of Article IV of the by-laws entitled "Definitions." The amendment would have the insertion after the words "refrigeration and air conditioning equipment, parts, and supplies at wholesale" of the phrase "95% of which is," thus making Paragraph (b) read as follows:

"(b) The Term 'Refrigeration Supply Jobber' is defined to mean a person, firm, or corporation actively engaged in the sale of refrigeration and air conditioning equipment, parts, and supplies at wholesale, 95% of which is to the trade as defined in paragraph (a) and who does not directly by retail sales, installation, or service, outside his own shop, including his own place of business, and then only at wholesale to the trade, or indirectly by sales to exclusive dealers, compete with distributors, dealers, or independent service or-

(Concluded on Page 4, Column 3)

Cylinder Hoarding Crops Up Again

WASHINGTON, D. C.—Reports that cylinders of methyl chloride and sulphur dioxide are being hoarded in the field because of rumors that these refrigerants may be in short supply are of serious concern to responsible officials here.

There is no shortage of either methyl chloride nor sulphur dioxide, nor is any shortage anticipated. The only shortage is the "artificial" one of cylinders. In other words, if cylinders are returned promptly, there will be plenty of these refrigerants for everybody.

Materials for both these refrigerants are in plentiful supply, and productive facilities are more than adequate.

Let Stove Industry Handle Rationing, Gov't is Asked

WASHINGTON, D. C.—Recommendation by industry men for an end to stove rationing was made at a meeting of the Domestic Cooking Appliance and Heating Stove Industry Advisory Committee called here recently to discuss rationing of stoves, material programming and allocations, labor problems, the lumber situation, thermostatic controls, the proposed amendment to Order L-23-c (Domestic Cooking Appliances and Heating Stoves), and the effects of recent amendments to Order L-23-c.

WPE's new Vice Chairman for Civilian Requirements, William Y. Elliott, was present at the meeting and asked committee members to explain why they felt that rationing of stoves should not be continued. Each committee member was asked to express his views on the subject.

They said that if rationing were removed from customers and dealers each manufacturer would naturally ration his own production equitably among dealers in order to build up dealer goodwill for the future. The opinion was expressed at the meeting that rationing has tended to restrict production because, committee members claimed, manufacturers won't produce stoves without a reasonable chance of moving them from their stocks, and since dealers have been holding certificates to get more desirable models, production has suffered.

The committee recommended that the personal certification method.

(Concluded on Page 29, Column 3)

Senators Urge More Material For Locker Use

Additional Food Storage Demands of Invasion Stressed at Hearings

WASHINGTON, D. C.—Possibility that the program to provide materials for the construction of new or addition to existing locker plants may be stepped up, was seen following hearings held by the Food Supply Subcommittee of the Senate Committee on Agriculture and Forestry.

Representatives of the War Food Administration and the War Production Board were said to have been instructed to review the situation to see what might be done on the matter of providing more materials.

A total of 530 applications have been approved to date (the end of May), it was revealed. It was also brought out that 189 applications had been denied and that 156 applications were pending.

Some of the testimony was to the point that the invasion would make the food problem more difficult than ever and that all means should be used to preserve this year's crop.

Sen. George D. Aiken of Vermont was chairman of the Subcommittee and presided over the hearings. The following senators attended the hearings: Wiley of Wisconsin, Tobey of New Hampshire, Shipstead of Minnesota, Gillette of Iowa, Wherry of Nebraska.

Those who testified included:

Grover B. Hill, First Assistant Administrator, War Food Administration

J. W. Millard, Director, Office of Materials and Facilities Branch, WFA

Arthur E. Burns, Assistant to Mr. Millard

Frank K. Wooley, Chief of the Processing and Facilities Branch, Office of Materials and Facilities, WFA

Frederick Smith, Chief, Special Services Equipment Branch, WPA

(Concluded on Page 32, Column 1)

Locker Assn. Plans Convention Sept. 25

DES MOINES, Iowa — Exhibit booth drawings for the annual convention and exhibition of the National Frozen Food Locker Association are now in preparation, and will be sent to all former exhibitors as well as to any others who are interested, it is reported from the association headquarters in the Old Colony building here.

The 1944 convention will be held Sept. 25-27 at Columbus, Ohio.

Further growth in the number of members is reported by the association, and records also show a 13% increase in the number of lockers on the average, that is, where there were 100 locker boxes in 1942, there were 113 by the end of 1943.

Arizona Raps Priority on Carrene for Grunows

PHOENIX, Ariz.—Protest has been made to the WPB by the Arizona Refrigeration Association that Carrene refrigerant for "orphaned" Grunow household electric refrigerators has been "cut off" with a AA-1 priority, and the proposal is made that it be apportioned to repairmen under an allotment plan.

The Arizona group claims that there is plenty of Carrene on hand, but that it can't be moved under present restrictions.

A Ticket for the 'Greatest Show on Earth'



Questions Answered on 'Priority Referrals' Plan

WASHINGTON, D. C.—The following questions and answers are based on the order of Paul V. McNutt, chairman of the War Manpower Commission, to regional directors to put into effect a priority referral system to give war industries the labor they need.

Q. What is meant by "priority referral?"

A. This is the War Manpower Commission's definition of priority referral: The channelling of workers to jobs in the order of the urgency of war needs.

TO CONSIDER LOCAL CONDITIONS

Q. Will local conditions be taken into consideration in putting the plan in effect?

A. The system will be applied only after consultation with regional and area committees and then to the degree necessitated by regional and national manpower needs.

Q. When will this new plan go into effect?

A. July 1, 1944, at the latest.

Q. How does the plan work?

A. It provides that employers in any area, except those in agriculture, may hire male workers only from among those referred by the WMC's United States Employment Service or in accordance with the arrangements approved by the local USES.

of WMC after consultation with the area management-labor committee. This will result in workers being referred to jobs in the order of relative importance to the war effort.

Q. Is that being done now?

A. Plans for priority referral were tried out, and successfully, some time ago in a few areas where labor shortages had become critical. More than 100 such plans of varying types are now in effect. They have been known as "controlled referral" plans.

Q. What assurance is there the new plan will work?

A. It will be backed by three tested programs: (1) employment ceilings that fix the total number of workers who may be employed in any given establishment in areas of labor shortage as defined by the War Manpower Commission; (2) setting up manpower priorities committees in all labor shortage areas; (3) stepped-up recruitment activities by the USES so that men may be transferred from labor surplus areas to those where there is an urgent need for more male labor.

Q. In how many areas are these programs now being used?

A. Manpower priorities committees have been set up in 56 areas. Employment ceilings are in effect in 31.

Q. What does a manpower priorities committee do?

A. This committee determines on the basis of production demands

which employers within the area shall have the first call for labor. They also work with the area director in setting up employment ceilings.

Q. Who are the members of manpower priorities committees?

A. There is some variation in membership but on all committees there are representatives of the War Manpower Commission, the War and Navy Departments, War Production Board, Selective Service, Maritime Commission, Smaller War Plants Corp., Aircraft Resources Control Office, War Food Administration, Office of Defense Transportation when there are transportation problems and Civil Service if government employment is an important factor.

Q. What do you mean by 'employment ceiling'?

A. An employment ceiling is the highest level of total employment or of specified types of employees which an establishment is not permitted to exceed, based upon an approved and necessary production schedule.

Q. Do ceilings for all employers in an area follow the same pattern?

A. Ceilings may be established to maintain employment at present levels; to permit employment expansion, or even to lower the employment level where practical. Those already in effect are of varying types. Some apply to all workers, some only to men, and some only to workers in certain industries.

WHERE CEILINGS APPLY

Q. Under this new program will ceilings be fixed throughout the country?

A. Ceilings will be fixed in the 184 labor shortage areas designated as Groups I and II in WMC listings.

Q. Will a man ever be referred to

other than an essential job?

A. Only when:

1. He is not needed for any essential job in the area.
2. He is unable to accept an essential job outside the area.
3. He cannot take the job without undue hardship or unless special emergency circumstances or other good cause would prevent his acceptance.

Q. Will the employer be given a freedom of choice in accepting men sent to him by the USES?

A. He will have wide latitude of selection. After all, he has a job to do and he knows the kind of men he wants on that job. The War Manpower Commission's concern is to see he has an opportunity to hire the men he wants.

Q. What happens if the man doesn't want the job offered by the USES?

A. He will be offered another, then another, and still others successively for which he is qualified in essential and locally needed activities in the order of the relative urgency to the war effort.

JOB OFFERS LIMITED

Q. Will there be any limit to the number of jobs that will be offered to a man?

A. In some areas it may be decided to put in a priority referral plan that provides for limiting the number. This will be determined largely on the basis of the stringency of the labor market and the urgency of the production in the area. In some areas where labor is very scarce it may be that a worker may be given a very small choice of jobs.

Q. Just what is the significance of placing this on a "nation-wide" basis?

A. It will enable recruitment of men for work in areas where they live or in any other area where they may be needed. It will make it possible to refer men now in a surplus labor area where their work may not be aiding in the war effort, to jobs in tight labor areas where they are needed more urgently.

Q. What other factors in addition to priority will be considered in referring a man to a job?

A. Normal referral policies, such as those relating to the referral of workers at their highest recognized skills to jobs at rates of pay reasonably consistent with prior earnings, will be followed.

Q. Is a statement of availability still required?

A. Yes.

Q. What about men released as the result of cuts in production schedules?

A. These men also need guidance in getting into new jobs. They are

needed in other plants or in other areas where war production schedules are being increased. An increase in cutbacks would only emphasize the need for priority referrals to get the released workers promptly into urgent war jobs.

Q. What is meant by the reference "other hiring arrangements to be approved by the USES?"

A. Placement of workers through union hiring halls, also by colleges and universities will be approved by the USES. Approval also may be given other hiring channels. The important thing is that the USES channels enough workers to meet the needs for essential industry on a nation-wide basis.

Q. How about a war veteran?

A. A recent ruling gives the veteran 60 days after the effective date of his discharge to take any job he wants, even if it is in a non-essential industry. After that he will be referred to a job through the channels indicated by the War Manpower Commission.

Q. Do part-time workers come under this plan?

A. In principle, yes. But local arrangements will be worked out to handle that situation. Ordinarily the very nature of this work makes it impractical to place the same restrictions on the choice of part-time jobs as are placed on full-time workers.

Q. Suppose a worker feels that the operation of the system has injured him in some way, what can he do about it?

A. He has the right to appeal first to the local organization of the War Manpower Commission and, finally, if he is still dissatisfied, to WMC headquarters at Washington.

EMPLOYERS CAN APPEAL

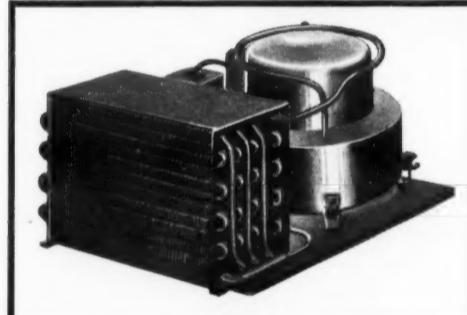
Q. How about an employer who doesn't like the employment ceiling that may be fixed?

A. He too has the right to appeal. The War Manpower Commission already has appeals machinery to handle cases of all sorts in which either the employer or employee feels he has a just grievance.

Q. Are any penalties provided for unauthorized hiring?

A. There are penalties, direct and indirect, but the War Manpower Commission believes the self interests of management will be sufficient to make the plan effective. Authority for penalties can be found in the Act giving the President extraordinary wartime powers and in certain other legislation. Among the indirect penalties, or sanctions, is one that makes it possible for the War Manpower Commission to give a statement of availability to any of a plant's employees. The WMC could also stop referring any workers to a plant which fails to cooperate.

BOTH Perform ...whatever the job



BOTH are All-Purpose Engineered

Our Navy's rugged little PT boats figure in some of the most astounding naval exploits of this war. Compact, versatile, speedy, and maneuverable as a fish, they perform a host of tough jobs well.

Universal Cooler's new postwar hermetics, too, are designed for all-purpose service. Low, compact, and with many advance features, they are "all-purpose engineered" for ready adaption to a host of postwar needs . . . including yours. On every postwar refrigerating system problem, leading fixture manufacturers are saying . . .

"Let's Ask Universal Cooler"

BUY WAR BONDS . . . AND KEEP THE BONDS YOU BUY!



UNIVERSAL COOLER CORPORATION

MARION, OHIO • BRANTFORD, ONTARIO

Refrigeration since 1922

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VIRGINIA

Refrigerants



TESTED PURITY
for
SERVICE
SURETY

"EXTRA DRY ESOTOO", "V-METH-L" AND METHYLENE CHLORIDE

AGENTS FOR KINETIC'S "FREON-12"—AND "FREON-22"

VIRGINIA SMELTING CO.

WEST NORFOLK, VIRGINIA

72 Beaver St., New York 5

131 State St., Boston 4

You
will have
a great
future
with Norge
because:



1 NORGE OFFERS ALL MAJOR APPLIANCES UNDER ONE BRAND

NAME—Norge refrigerators, gas ranges, washers, electric ranges and home heaters comprise a well-diversified line with which to capture multiple sales from each customer.

2 NORGE IS THE CHAMPION OF INDEPENDENT DISTRIBUTION—

Norge was first to formally announce a postwar policy of independent distribution. Norge's past has been tied up with independent distribution. The factory will not compete with its dealers.

3 THE NORGE LINE IS PROFITABLE

—Fair pricing and minimum selling costs because of wide public acceptance assure good profits to Norge dealers. Combination sales to the same customer provide opportunities for "plus profits." Mixed shipments keep freight charges down.

4 EVERY NORGE PRODUCT HAS EXCLUSIVE FEATURES—

Each Norge product is strong on eye-appeal—and is backed by exclusive features—buyable differences—of convenience and efficiency. Norge mechanisms are noted for long, trouble-free service.

5 NORGE OFFERS PRODUCTS OF EXPERIENCE—

Many years of designing, changing, home testing and improving have resulted in true *products of experience*. Norge's appliance know-how is your protection.

6 NORGE PRODUCTS HAVE GOOD WARTIME RECORD—

Sturdy construction of working parts, plus the convenience of nationwide major service centers, has won the praise of dealer and owner during the "non-replacement" years.

7 NORGE HAS DEVELOPED MANY

"FIRSTS"—Many engineering developments originated by Norge have subsequently become standard in the industry—resulting in prestige which greatly helps the sale of all Norge products.

8 NORGE ADVERTISING IS PRE-SELLING PROSPECTS—

Aggressive and consistent national magazine advertising is a well-known Norge policy. Local advertising on a generous cooperative basis is offered to the dealer.

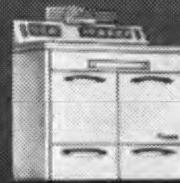
9 NORGE PERSONNEL IS EXPERIENCED—

A large percentage of Norge factory men and distributors have been on the job for ten years and more. This means that a well-seasoned personnel works with and gives friendly counsel to the Norge dealer.

BETTER PRODUCTS FOR A BETTER WORLD

SEE

NORGE
BEFORE YOU BUY



"...for outstanding
production of
war material."

Frank, Harry, Albert Fogel Buy Jordan Co.

PHILADELPHIA—Frank, Harry, and Albert Fogel, who recently sold out their interest in Fogel Refrigerator Co., are now in complete ownership and management of the Jordan Refrigerator Co., 235-37 N. Broad St. here. This firm claims to have had almost a half century of experience in the refrigeration field.

At present, the new principals have taken over a building with 30,000 square feet of floor space. Postwar plans call for facilities that will provide 100,000 square feet of floor space.

Jordan Refrigerator Co., say the new principals, is to make and market all types of commercial and industrial refrigerators, including beverage cooling and low temperature equipment.

Albert Fogel has designed a new 5 cubic foot home freezer, which features easy accessibility of the food compartment, and which the company plans to merchandise after the war.

Raymond Cosgrove Elected President of RMA

CHICAGO—Raymond C. Cosgrove, vice president and general manager of Crosley Corp.'s manufacturing division, was elected president of the Radio Manufacturers Association during the group's twentieth annual membership meeting held at the Stevens hotel here recently.

Helen Peffer Honored

At A.S.R.E. Meeting



HELEN H. PEFFER

PITTSBURGH—Miss Helen H. Peffer, editor of "Refrigerating Engineering," official publication of the American Society of Refrigerating Engineers, was guest of honor at the annual luncheon held in connection with the society's thirty-first annual spring meeting here.

Major David L. Fiske, former secretary of the ASRE now serving with the Army, gave an informal talk honoring Miss Peffer, in which he described her as being the "main-spring" of the society.

Eversden Establishes Offices as Agent

PHILADELPHIA—Frank M. Eversden has opened offices in the second floor of the Cunard building, 220 South 16th St., Philadelphia, from which he will direct activities as manufacturers' agent in a territory comprising Pennsylvania, New Jersey, Delaware, Maryland, and the District of Columbia.

The firm will be known as F. M. Eversden & Associates and will confine its contacts to jobbers, original equipment manufacturers, and industrial accounts.

Mr. Eversden was for several years connected with the Kerotest Mfg. Co.

Jobbers Vote 'No' on Qualification Changes

(Concluded from Page 1, Column 3) organizations which are normally some of the trade factors to whom the Refrigeration Supply Jobber is expected to market refrigeration parts and supplies."

The ballots were 45 not approving and 40 approving on the proposed amendment of Paragraph (a) (4) of Article V, entitled "Membership" which would read as follows:

(a) (4) Has no financial interest, either as a company or through any executive, employee, partner, or stockholder in any company engaged in any phase of the refrigeration business which would not of itself qualify as a 'Refrigeration Supply Jobber' as defined in Article IV (b)."

Air Forces Test Their Ground Equipment



A small tractor and a large fuel servicing truck emerging from the new test refrigerator built by the York Corp. at Wright Field, Ohio, after being put "on ice" to test the ability of Air Forces equipment to take the punishment of arctic weather.

Wright Field Test Room Installed by York

2 More Distributors Named by Crosley

WRIGHT FIELD, Ohio—A refrigerator large enough to put an entire fuel servicing truck "on ice" is now being used by Equipment Laboratory of the Engineering Division research engineers to test the ability of Air Forces equipment to take the punishment of arctic weather.

The refrigeration equipment was built by the York Corp. after having been designed by its engineers, in collaboration with Materiel Command Aircraft Laboratory engineers. The 80 feet long cold chamber is capable of operating at temperatures lower than -70° F. In it, the Army gives a "pre-induction" to all types and descriptions of Army Air Forces equipment. One of the chief uses for the low temperature tests is to determine the starting and running efficiency of internal combustion equipment.

The Materiel Command's refrigerator, 25 feet high and 25 feet wide, is divided into two compartments so that separate tests can be carried on simultaneously at different temperatures. Its 16-inch thick double doors weigh four and a half tons and are large enough to admit nearly any piece of Army Air Forces apparatus. Cooling equipment for the cold room is located in the ceiling where 60,000 cu. ft. of chilled air is circulated each minute during the temperature pull-down period. Observation windows contain eight thicknesses of glass to prevent frosting which would obscure vision.

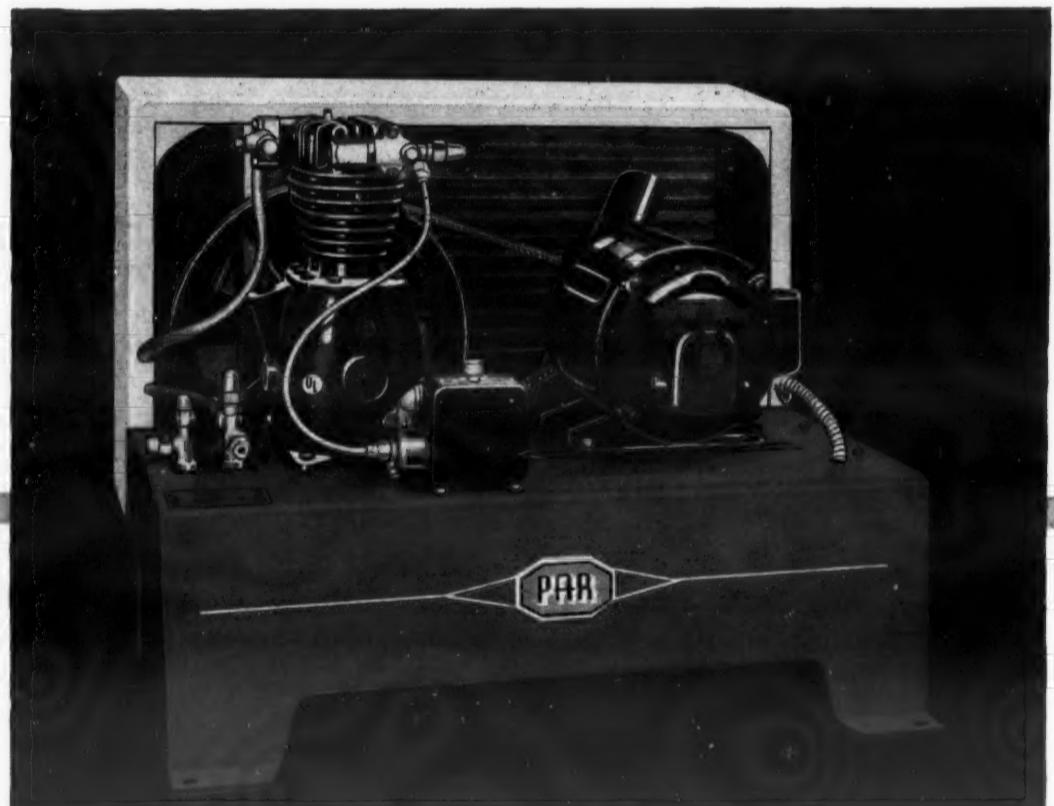
New Locker Plant Formed In Indio, Calif.

FREEZING OVEN and FREEZING SHOWER

The successor to the Pipe Coil for Low Temperature (below 32°)

KRAMER TRENTON CO.
Heat Transfer Products
TRENTON, N.J.

INDIO, Calif.—Indio Locker Plant, Inc., has been organized at Indio, Calif., with 1,000 shares of no par value capital stock. Directors are: Edward E. Green, Rebecca A. Green, and Lucille M. Smith, all of Indio.



Par Model HA-10

- For soda fountain . . . meat case . . . walk-in cooler . . . and small dairy cooler applications.
- A 2 cylinder 1 H.P. husky air cooled unit built for economical trouble free service.
- Large condenser, slow speed, fast pump down are outstanding features of all PAR units.
- Write for illustrated brochure of details.
- BY COMPARISON—YOU'LL BUY PAR.

PAR Division

LYNCH
MANUFACTURING
CORPORATION
Defiance, Ohio, U.S.A.

Investigate
S H E R E R

...decide Now on your Postwar source for
Refrigerator EQUIPMENT

WRITE
SHERER-GILLET CO.
MARSHALL, MICHIGAN

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Ewell's Attack on '42 Household Refrigerators Arouses ASRE Members

(Concluded from Page 1)

at the end, the average being below 60% with accompanying food injuries."

Dr. Ewell's statement that the modern ice refrigerator was superior to most 1942 electric models in regards to humidity brought several attacks from A.S.R.E. members until it was pointed out that he was referring only to the question of humidity, disregarding for the moment the several other important factors in proper food preservation.

TESTS FOR MOLD AND SLIME

Results of numerous tests to determine the effects of various temperatures and humidities on the rapidity with which mold and slime appear on foods stored in refrigerators were reported by Dr. Ewell.

At a temperature of 37° F. and relative humidity of 60%, slime did not appear on the foods under test until the twenty-fourth day. At 75% humidity 16 days were required, and at 90% humidity only six days elapsed, said Dr. Ewell.

But at a temperature of 46° F. and 60% humidity, slime appeared in eight days. At 75% humidity and 46° F., slime appeared in five days, and only three days were required at 90% humidity.

"Thus," declared Dr. Ewell, "dropping the mean temperature from 46° to 37° F. retards the appearance of slime even more than a reduction in the humidity from 90% to 75%."

TEMPERATURE CONTROLS

MOLD

Appearance of mold is only slightly dependent upon the humidity, he added. With mucor, the most prevalent meat mold, the number of days after infection to visible mold is five days at 37° F. and two days at 46° F., whether the humidity is 75% or 90%.

"Whether slime or mold appears first depends primarily upon the kind of food and the initial infection, and, secondarily, upon the temperatures and humidity—bacteria requiring higher humidities than molds and in general higher temperatures," pointed out Dr. Ewell.

Humidity also plays an important role in maintaining or impairing the color of the foods stored in refrigerators," explained Dr. Ewell. According to his tests, color of many foods will suffer due to surface drying in two or three days if the humidity is as low as 75%. But, with 90% relative humidity, no serious deterioration of surface color has appeared with any foods during three days storage, and except with cut surfaces of fruit, none during five days, Dr. Ewell said.

HOW ODORS ARE TRANSFERRED

The third point of Dr. Ewell's investigations had to do with odors and cross contamination. "Transfer of tastes and odors is by molecules or molecular aggregates given off by the foods, which migrate in the air to other foods, imparting their par-

ticular flavor and odor," explained Dr. Ewell.

"If the humidity is low, the food surfaces will soon be partially desiccated and will give off and accept less migratory molecules, with the result that transfer of tastes and odors will be greatly reduced.

"In a domestic refrigerator with 90% relative humidity, at the end of one day, butter, milk, and water absorb the taste and odor of fish, cantaloupe, onion, cucumber, cabbage, etc. At the end of two days the general odor from such a cabinet with even a half loading of miscellaneous foods is poor, and at the end of three days very bad."

GERMICIDAL LAMP ADVOCATED

To counteract odors and odor transfer in the refrigerator, Dr. Ewell suggested the installation of an ultraviolet ray lamp in a suitable fixture and location to "provide radiation of wave length 2537 which is the most powerful bactericidal agent feasible for food storage. It will also give

sufficient radiation of wave length 1850 which produces ozone."

Almost all the odor and taste-bearing molecules are destroyed by 2537 radiation and ozone, and both agents inhibit the growth of bacteria and mold, stated Dr. Ewell. Installation of such a lamp would permit what Dr. Ewell considers the ideal combination of temperature and humidity (37° F. and 85% to 95% relative humidity), he pointed out.

In discussing Dr. Ewell's paper, W. M. Timmerman of General Electric Co. (whose paper was read by Dr. Donald K. Tressler, also of G-E) disagreed with the speaker on several points. The 1942 model electric refrigerators, in Mr. Timmerman's opinion, were all right and maintained temperature at 40° F.

"The odor problem has been over-exaggerated," declared Mr. Timmerman. "We have found that covered containers for food provide adequate control of odor, and also maintain good humidity conditions. I think that the present design of refrigerators, including these covered con-

tainers, will stand for some time to come."

The practical answer to some of these problems, according to Mr. Timmerman, is to include two sections within the refrigerator cabinet, drawers, or compartments providing high humidity storage space.

Mr. Timmerman also declared that the "value of ultra-violet lamps in the average household refrigerator is still to be proven."

Glenn Muffly, consulting engineer, found little objection to Dr. Ewell's ideas, but pointed out that the ideal conditions called for by Dr. Ewell would necessitate designing a two-zone refrigerator to provide both proper temperature and humidity.

NEED GOOD CONTROLS, SAYS MUFFLY

"I see no objection to going below 37° F. if we have adequate and accurate control of temperature and humidity," he said. Mr. Muffly was also skeptical of the somewhat popular idea that after the war most householders would have two refrigerators: a locker freezer and a conventional box. Rather, he said, the chief trend will be toward a larger refrigerator containing low temperature storage space for frozen foods.

Numerous practical questions were asked Dr. Ewell by Dr. Wm. R.

Hainsworth, vice president of Servel, Inc., when he commented on the paper. Agreeing that temperatures for long storage should be maintained as low as possible without harming the foods, Dr. Hainsworth wanted to know how ultra-violet lamps were required? what shielding of the lamp or lamps was necessary? the cost of such a refrigerator? whether it would be necessary to increase the size of the cabinet? and was there any gain over hydrators and covered meat compartments as used in the conventional refrigerator?

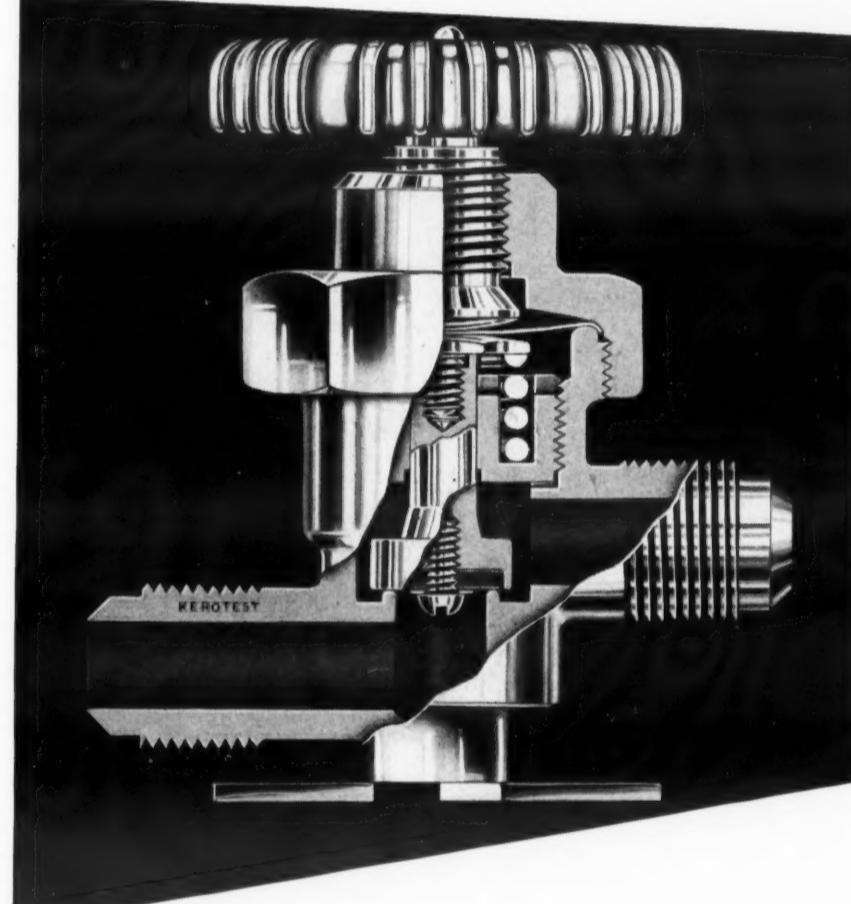
ONLY ONE LAMP REQUIRED

Dr. Ewell replied that only one lamp had been found necessary in his tests, and further explained that he had not been interested in the question of cost while conducting his tests. He was simply trying to determine what he considered the optimum storage conditions.

Milton Kalischer of Westinghouse Electric & Mfg. Co. also commented on Dr. Ewell's paper, agreeing that "there's a great deal of room for improvement" in household electric refrigerators.

"Tests some years ago showed that fluctuation in temperature within the cabinet between cycles caused condensation on food and resultant spoilage," he said.

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Precision
CONTROLS FOR
THE AIR CONDITIONING
REFRIGERATION
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KEROTEST

Precision performance—essential in the control of refrigerants—is delivered by Kerotest Valves as the natural consequence of precision in manufacture.

Now in war service by the thousands, proving outstanding dependability under the most exacting conditions, Kerotest Valves are also earning service-stripes on the home fronts, protecting irreplaceable equipment year after year with built-in smoothness and durability.

Kerotest Valves in limited quantities are now available.

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Valves



Gov't Study Shows Public May Not Rush For Appliances When They're Available

Many Plan to Use Savings to Build Own Home; 'Orderly Market' Is Predicted

WASHINGTON, D. C.—Demand for consumers durable goods and appliances today is close to the levels immediately preceding the war, but a large number of families intend to use their savings for buying or building a house before purchasing durable goods, W. Y. Elliott, War Production Board Vice Chairman for Civilian Requirements, said early this month in making public the results of the Office of Civilian Requirements' third nationwide survey of consumer requirements.

Among 11 appliances covered in the survey, washing machines are now in greatest demand, with electric irons and mechanical refrigerators in close second and third positions. Other items covered in the order of present consumer preference, were cooking stoves, electric toasters, radios, sewing machines, vacuum cleaners, heating stoves, electric fans, and water heaters.

One out of 10 of all the families interviewed said that they would buy or build a new house now if plenty of materials and labor were available.

"Generally speaking" said Mr. Elliott, "people have accepted the wartime lack of durable goods and appliances without complaint, and this survey indicates that when such goods become available again, there

should be an orderly market rather than the wild buying rush which some people have predicted.

'SENSIBLE BUYING' FORESEEN

"When it becomes possible to release materials and facilities for the production of consumers durable goods, the programs of the Office of Civilian Requirements, aimed initially to take care of minimum essential needs, should provide a smooth transition back to the normal condition of unrestricted supply. The survey results indicate that the American public will follow a sensible buying policy instead of creating a sudden boom market, which might lead to an equally quick collapse."

The Office of Civilian Requirements is concerned only with supplying essential needs during the changing conditions which will arise while the war is still going on. The picture of demand provided by this survey is highly encouraging as to the willingness of the public to restrict their demands to real needs until the war is over."

Among all of the 4,488 households interviewed, 44% said they would buy one or more of the listed appliance items at once if they were available, while 56% said they would not buy

any of these items immediately, even if there were plenty of all of them in the stores.

For each of the appliances listed, respondents were asked whether they had tried unsuccessfully to buy the item during the last year, how much difference it made to them if they had failed, and finally "Would you buy a new one right away if there were plenty of everything in the stores?" Those who said they would buy more than one of the items were asked to indicate a first and second choice. The total demand figures are shown in the table.

APPLIANCE DEMAND CAN JUMP

The table shows the demand only from households that would purchase the items for their own use. For some of the items, such as refrigerators and stoves, this demand may be substantially increased when they are readily available by purchases which apartment house owners and landlords generally might make for the benefit of their tenants, Mr. Elliott said.

In estimating the total active demand from the survey results, the most realistic figure is probably the total of first and second choices for each item rather than the total number who say that they would buy if the items were available, he said. Even on the first choices a considerable number of the respondents indicated that they had some reserva-

Families Who Would Buy Durable Goods and Appliances If All Were Readily Available

Item	No. of Respondents*		Estimated U. S. Total	Total Who Would Buy
	Would Buy First	Would Buy Second		
Washing Machine	337	134	3,935,676	510 4,261,560
Electric Iron	311	116	3,568,012	481 4,019,236
Mechanical Refrigerator	304	113	3,484,452	458 3,827,048
Cooking stoves—total	235	99	2,709,904	379 3,166,924
Gas	92	50	1,186,552	159 1,328,604
Oil	58	14	601,632	80 668,480
Wood or Coal	56	15	593,276	81 676,836
Electric	29	20	409,444	59 493,004
Electric Toaster	195	90	2,381,460	383 3,200,348
Radio	154	89	2,030,508	321 2,682,276
Vacuum Cleaner	140	76	1,804,896	286 2,389,816
Sewing Machine	128	89	1,813,252	278 2,322,968
Heating Stoves—total	72	34	885,736	147 1,228,326
Wood or Coal	43	13	467,936	70 584,820
Gas	13	10	192,188	35 292,460
Portable Electric	9	2	91,916	16 133,688
Oil	7	9	133,696	26 217,250
Electric Fan	67	64	1,094,636	178 1,487,368
Water Heater—total	48	19	559,852	93 777,108

*Of the 4,488 households interviewed.

tion about their buying intentions, and it is improbable that many families would buy immediately more than their first and second choice items, Mr. Elliott added.

The families that said they would buy or build a new house at once if materials and labor were available were asked whether they had discussed the plans, about how much they expected to spend for a house, whether they had actually done anything about it, and whether on reconsideration there were some reasons why they might wait a while before buying or building. Ninety-one per cent of the members reporting new house plans had discussed them with the family and 71% had actually saved money that they intended to use for a house.

"It depends" or "Do not know."

The total number who would buy out of savings does not vary greatly from item to item but, as might be expected, the number who would buy on installments tends to increase as the item becomes more expensive. OCR said. Thus 57% would expect to buy a wood or coal cooking stove on instalment while only 4% would want deferred payments to buy an electric toaster.

Among the 56% of all families interviewed who would not buy any of the appliance items immediately, 77% said either that they did not need the item or that they had one in satisfactory condition, and 12% said they did not have enough money.

Only 1% of this group gave waiting for improved models as a reason for postponing purchase.

The 44% who would buy one or more items right away if available were asked, in reference to their first choice, "Are there any reasons you can think of why you might wait a while before buying, even if there were plenty now?" Sixty-two per cent said they had no reason for waiting, while 38% expressed some

(Concluded on Page 7, Column 1)

PRE-WAR...FASTEST GROWING!

For two years before the war, Crosley had been expanding and progressing at the fastest rate in the company's history. Sales of Crosley Refrigerators with the patented

Shelvador* were twice the industry average. Radio sales were up 68% in 1941 and even higher in 1942 when production of civilian radio was stopped.

*Reg. U. S. Pat. Office

POST-WAR...EVEN HIGHER GOALS!

The exacting standards of war production have been met by an engineering department increased 12-fold; by 10 times as many people on quality control; by complete moderni-

zation of every plant, and the purchase or construction of new plants. Result: greater-than-ever facilities, production skill, and a Crosley management ready for the post-war period.

Only Crosley has the extra available space and twice as much food to the front found exclusively in

The SHELVDATOR



Only Crosley has the unique invention which virtually eliminates surface scratch and needle noise.

The FLOATING JEWEL



The Floating Jewel stylus plays on the sides of the groove instead of the bottom. The up-sweep of Crosley Radio and Radio-Phonograph sales just before conversion was aided by this exclusive Crosley invention. New sets will be even finer when civilian production is resumed.



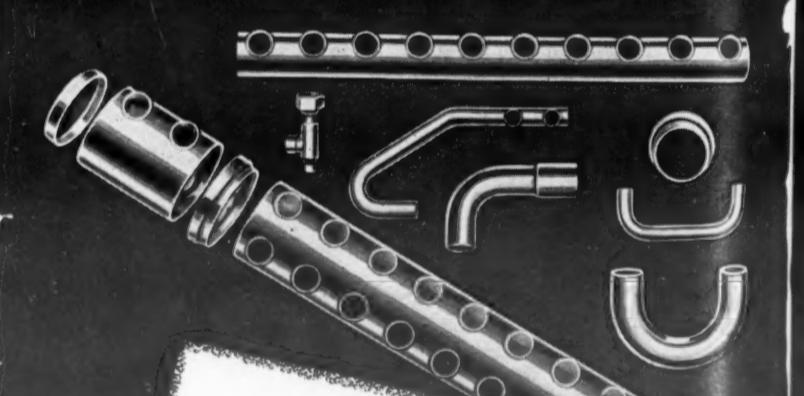
CROSLEY

THE CROSLEY CORPORATION • CINCINNATI, OHIO

Peacetime Manufacturers of Radios, Refrigerators, Household Appliances, and the Crosley Car. Home of WLW, "the Nation's Station"

See Crosley Exhibit, July 6th to 15th—spaces 44 to 48 inclusive—17th floor, American Furniture Mart.

Air Conditioning FOR TOMORROW



NIBCO WROT FITTINGS AND TUBULAR PARTS

NIBCO Fittings are so accurately made that they save substantial sums in assembly costs. Specially designed equipment and a unique patented process make NIBCO WROT Fittings absolutely "round and square" and easy to align. Individual inspection with plug gauge tests of every item eliminates all guesswork. More than 1,000 standard fittings and other items are shown in our Air Conditioning and Refrigeration Catalog. We also welcome your inquiries for special tubular or cast parts. Remember Nibco in your post-war planning.

NORTHERN INDIANA BRASS CO.
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Very Few Say They Will Wait To Buy 'Improved Models'

(Concluded from Page 6, Column 5) reservation when thus asked to reconsider their buying plans. The most important reservation, accounting for about half the total, was that they might not have enough money or prices might be too high. Another quarter of those who wanted to buy but had reservations said that they might wait for an improved model. Tabulations of these reasons for expressing reservations are not yet available item by item.

The families expressing a desire to buy one or more of the items if plenty were available were also asked why they needed the first-choice item at once. For all first choices, regardless of item, 42% said they needed a new one because their old one was unsatisfactory and 56% wanted the item because they did not have it. These percentages varied considerably from item to item.

Among those for whom washing machine was the first choice, only 29% had an old one that was unsatisfactory, while 69% have none now but want one. Moreover, within this 69% more than one-third gave "Difficulty with Services" as the reason for needing a washing machine.

In contrast, 49% of those who named radio as their first choice wanted to replace an old one, 46% have none but want one, and 5% say that perhaps they don't really need one after all. This indicates that nearly one-half of the existing radio market as estimated above comes from families which now have no radio, and half of these report that they can afford one for the first time.

New Dealership In Dayton Established

DAYTON, Ohio — The Neighborhood Appliances Co., retailing General Electric and Hotpoint household refrigerators and servicing all makes of commercial installations, will open its doors at 2034 Wayne Ave. at the end of this month.

Partners in the firm are Raymond L. "Bud" Baesecker, who started doing refrigeration repairing 13 years ago as a sideline hobby, and Edward O. Bowman, his brother-in-law, an independent refrigeration service contractor for more than 15 years and formerly head of Bowman Refrigeration Service here.

PURO ELECTRIC WATER COOLERS

DRINKING WATER SPECIALISTS For Over 40 Years PURO FILTER CORP. OF AMERICA

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DRINKING WATER SPECIALISTS FOR 40 YEARS.

MASTERCRAFT ADJUSTABLE PAD AND CARRYING HARNESS

Endorsed by Thousands!

Used and endorsed by thousands of refrigerator dealers in the United States and Canada. Pad is adjustable to all makes and sizes of refrigerator cabinets; thoroughly protects finish of cabinet from scratches and marks during moving; easily and quickly put on or off; sturdy, lasting construction; easily pays for itself in a short time. Price \$1.75 each. Attractive lettering of your name on pad at \$2.00 each extra. Harness is a separate unit from the pad, is adjustable, and provides a simple and convenient arrangement for carrying your refrigerator more safely and easily. Price \$3.50 each. Write for complete folder and prices on pads for refrigerators, washers, irons, ranges, radios; and furniture pads and protective covers... All prices subject to change without notice.

BEARS MANUFACTURING CO. INCORPORATED 1917

3815-3825 Portland Street, Chicago 47, Illinois

More Manufacturers Given Quotas For Irons

WASHINGTON, D. C.—Additional production quotas for 575,600 electric irons, bringing the grand total of 1944 production authorized to date to 1,374,938 irons, have been issued to eight more firms, says WPB.

The manufacturers and quotas are: American Electrical Heater Co., Detroit, 41,000. General Electric Co., Ontario, Calif., 421,500. Gilson Electric Mfg. Co., Chicago, 5,000. Manning-Bowman & Co., Meriden, Conn., 38,500. National Stamping & Electric Works, Chicago, 8,800. The Nelson Machine & Mfg. Co., Cleveland, 58,000. Lawrence M. Stein Co., Chicago, 1000. Waage Mfg. Co., Chicago, 4,800.

Quotas for the production of the remainder of the program will be assigned to additional manufacturers, as soon as possible, WPB officials said.

Westinghouse Outlines Its Program For Re-employment of War Veterans

Special Emphasis Placed on Finding the Right Job

EAST PITTSBURGH, Pa.—A comprehensive program for the re-employment of discharged service men and aid in the readjustments from military to civilian life has been announced by the East Pittsburgh plant of the Westinghouse Electric & Mfg. Co.

Calling for the re-employment of all Westinghouse veterans and, whenever possible, for the hiring of veterans who worked for other firms before entering the service, the new program is headed by Walter L. Hitt, plant protection chief, and veteran of World War I.

More than 5,600 employees of the East Pittsburgh plant have been given military leaves of absence. To date only 455 have returned to work.

Key point in the program is a thorough analysis of every job in

the big plant to determine those that can be filled with handicapped veterans. By checking a "job card" listing the qualifications for a certain task it is quickly determined whether the applicant is fitted for the work.

"We have had no difficulty in placing men and women employees returning from the services," said John W. Schaffer, the plant's industrial relations manager. "Most of the men were given medical discharges for defects which made them unfit for hard military life but which, in most cases, did not affect their usefulness in industry."

The rehabilitation program, which is operated in cooperation with the United States Employment Service and the Veterans Employment Service, also provides for:

Continuous service credit for time

spent in the armed forces by employed veterans.

Constructive aid in rehabilitation of veterans in line with service medical recommendations.

Helping veterans with "red tape" work in connection with federal benefits and in the handling of civilian problems such as housing and rationing.

A follow-up system for employed veterans to help them readjust their lives to civilian employment.

Important in successful operation of the plan is the work of the medical department. For example, an examining physician checks a returning employee who was a lathe operator. The doctor compares his findings with the "job card" and if the applicant is no longer physically able to handle the job he is assigned other work.

"One World War II veteran now working at the plant lost his left arm when he was hit by shrapnel," said Dr. C. F. Engel, assistant medical director. "He was placed as a production clerk, a job in which he writes with his right hand and walks back and forth through the plant to check on progress of production."



It's a foregone conclusion that the post-war demand will be for automatic "washers" — with the Bendix principle the only one proved by years of successful service outside the laboratory.

BENDIX HOME APPLIANCES, INC.
South Bend, Ind.

The People who Pioneered and Perfected the Automatic "Washer"

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)
itorial. It contains some specific advice for every business man in the industry.

From 'Disposall' To 'Bazooka'

It is now revealed that the job of designing the bazooka as the public recognizes it today fell on the shoulders of G-E Engineer Jim Powers, who in peacetime worked on the Disposall, a device which disposes of kitchen waste. The Army wanted a large quantity of this yet-to-be-designed rocket-launcher within 30 days.

It took Powers 24 hours to do the job. In four days the first sample gun was turned out and, at the end of three weeks the development of the gun was completed. Seven days were left to turn out thousands!

The assembly line G-E set up was one of the oddest in industrial history. Basically the bazookas were produced in two plants a half mile apart. But within each department the work was scattered over widely separated sections.

As the bazookas came off the production line they were hustled into waiting Army trucks and, literally, were on their way overseas before

the stain on the gunstocks was dry. The last bazooka of this big order came off the line—with 89 minutes to go!

When They Return

What is G. I. Joe going to wear when he sheds his uniform?

Merchants and manufacturers who are concerned with dressing the returned veteran will find helpful facts in a study presented by *Nation's Business* in its June issue.

Donn Layne of the *Nation's Business* staff, who talked with many leaders in all branches of the clothing industry, reports the first cut out of the demobilization pay will go for clothes. Few veterans will be able to use civilian garments they wore before going into service because almost every man will be broader in the shoulders, bigger around the chest, smaller in the waist, and will have larger feet than he had as a civilian. Therefore, he will have to have new clothes.

The soldier who will shed khaki is expected to go for a double-breasted gray or blue, perhaps a pronounced plaid, a wide herringbone, or a salt-and-pepper affair. The sailor, shedding blue, will want brown or gray. The veteran will want his coat wide in the shoulders, easy through the

waist, trim over the hips. He will want cuffs on his trousers and it is expected his first pair of suspenders will yell.

He probably will go for a white shirt, with a long pointed collar and French cuffs. He will want no more plain-color ties. His neckwear will pack plenty of authority, probably with red predominating.

He will want bright socks, light blue, yellow, or red in mixed patterns. Whatever his tastes may be in shoe styles, he will have to have them broad, because feet that have carried the service man won't crowd themselves into tight shoes. Returned sailors will want brown shoes. Returned soldiers will want them black.

What about hats? Many young men in the service are wearing hats for the first time. Will they want civilian headgear or will they go back to their bareheaded habits? It is a million-dollar question.

Outfitters who were interviewed by *Nation's Business* agree that the demobilized veteran will head for home adorned in the finest, brightest colors on which he can lay his hands.

Who has a better right?

Aircraft News

Cargo and passenger planes are quietly moving into a larger share of the production quotas both here and abroad. Canada is even beginning to turn out planes for civilian use, concentrating on the four-engined Douglas DC-4 type.

In this country Consolidated Vultee is readying a 48-passenger plane designed for the accommodation of engines of varying horsepower so as to make it available for high-speed transportation if needed.

And Douglas is again out in front with its DC-7, for which is claimed a speed of 400 miles an hour—almost as fast as some fighter planes!

Out at Willow Run they have again cut production time on the B-24 Liberator by welding airframe

parts instead of riveting them (saving 90 manhours per plane).

Army officials incline to the view that the end of the war in Germany will mean no slackening of airplane production. They say that vast quantities of planes which will be left in the Mediterranean and European theatres may never be used against Japan. Rather, the call will be for newer types and models which will then be available.

It's no secret that some very hot new jobs are now flying around on test.

Inasmuch as many manufacturers in this industry are at work on parts for these advanced planes, "total conversion" may be a long way off.

Look Who's Here!

At the conclusion of testimony in a divorce case in Lexington, Ky., Circuit Judge Chester D. Adams advised the couple to make up, go home and use a little more common sense. He also advised the husband to buy an electric refrigerator. Testimony was introduced to show the wife had been spending too much time with the ice man while the husband was away from home.

No Automatic Prosperity

The postwar dream is wonderful, but a dream never comes true without a good merchandiser, says William E. Holler, general sales manager of Chevrolet.

"I have heard it said that everything—including employment, production, sales, and profits in businesses of all kinds—will almost immediately and automatically, go through the roof and keep on going (in the postwar period)," Holler says.

"Think of the almost unlimited buying power people will have (the optimists say)—one hundred billion

dollars of savings at the end of 1944. Think of the drastic shortages of consumer goods of all kinds. Think of the tremendous pent-up demand for all these products in every home in the land.

"But what these optimists fail to mention is that a recent survey shows that 50 percent of our people have no plans for spending in the postwar period . . . that 73 percent of the remaining 50 percent say they are going to wait and see what happens . . . and that all statistics to date indicate that the major part of postwar buying will be based on postwar income rather than on the nest egg of accumulated savings."

In his travels around the country, Holler has met more than one manufacturer who asserts that he is all set to go on a new product. But, Holler says, the manufacturer betrays a lack of real planning when he is asked:

"How are you going to market these new products? What kind of selling organization will you have? What are your thoughts on distribution—on sales—advertising?"

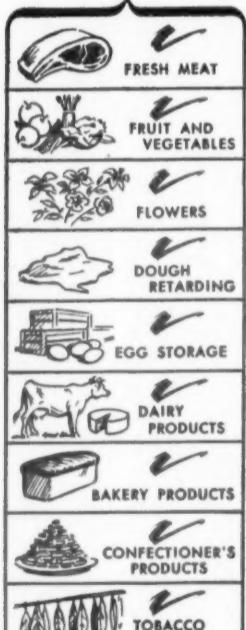
In discussing reconversion, Holler says that there probably will be a more or less brief period of change-over in many factories and cities which will tend to frighten millions of buyers and freeze much of the postwar purchasing power.

This, he said, will be followed by a buying flurry in some lines perhaps, "and then a hurry-up call for salesmen—quality salesmen—of the spoken and printed word—to get things going again on a volume basis."

"It will be impossible, in spite of pent-up demand and shortage of transportation, to sell the volume of passenger cars and trucks that will be needed to provide jobs for millions of returning soldiers, jobs for the unemployed and jobs for the manufacturers themselves—unless conversations are held between the people who want to sell the goods and the people who want to buy the goods."



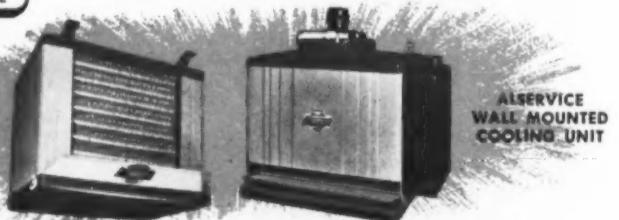
Replacement Market Check List



Recently published figures of the W.P.B. Task Committee show that the sales of commercial refrigeration equipment for replacement during 1944 will exceed \$100,000,000 in retail sales value. Opportunities are wide open in all these fields . . . and with other commodities where dehydration is detrimental and cooling necessary. The Amcoil Food Conditioner, a "complete refrigeration system", when combined with any condensing unit, offers ground-floor advantages to all connected with its sales and promotion.

Temperatures controlled down to 35° F. and relative humidities up to 93%, this new Amcoil operates in all walk-in boxes, helps to insure the success of storage and product conditioning operations. It is now available on rated orders—AA5 or better under L-38. While fully cooperating with all war-time restrictions, we have never used substitutes to maintain volume output—a policy that applies to all Amcoil commercial and industrial units.

ORDER NOW FOR IMMEDIATE SHIPMENT
ALSO AVAILABLE NOW



Another Amcoil Unit soon to be available is: Zerobreeze Low Temp Unit with Automatic Electric Defrost.



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TUBING CUT RIGHT helps make JOINTS THAT STAY TIGHT



Small Size for Close Places



• No. 127-F Tubing Cutter. A small size cutter that is exceptionally convenient and efficient. Takes $\frac{1}{8}$ " to $\frac{3}{4}$ " O.D. tubing. Makes clean, square cuts; will not flatten tubing. Dotted line shows position of reamer when in use.



• You cannot buy a better tubing cutter than this Imperial No. 174-F. Makes clean, right-angle cuts. Leaves no burrs or chips to clog line. Tubing rolls on two rollers, reducing friction and speeding cutting. Has exclusive flare cut-off groove for removing a damaged flare from tubing with minimum waste. Reamer attached. Cuts $\frac{1}{8}$ " to $\frac{3}{4}$ " O.D. tubing.



• Nos. 184-F, 185-F Sawing Vises. Especially serviceable for cutting larger sizes of tubing. Used with any standard hacksaw to make perfect, right-angle cuts. Tubing will not be crushed or marred. No. 184-F takes $\frac{3}{16}$ " to $2\frac{3}{8}$ " O.D. tubing. No. 185-F takes $1\frac{1}{2}$ " to 4 " O.D. tubing.

IMPERIAL Refrigeration and Air Conditioning Products

FITTINGS • VALVES • DEHYDRATORS • FILTERS • FLOATS • CHARGING LINES
TOOLS FOR CUTTING, FLARING, BENDING, COILING, PINCH-OFF AND SWEDGING

Better Business Bureaus Plan New Tests On 'Refrig-O-Master'; Claims Modified

DETROIT—Two local Better Business Bureaus have recently made supplementary reports on the "Refrig-O-Master" device. These reports are as follows:

St. Louis Bureau Report

BETTER BUSINESS BUREAU of ST. LOUIS, Inc.
ARCADE BUILDING
EIGHTH and OLIVE STS.
Merchandise Division Information Bulletin

"REFRIG-O-MASTER"

In our bulletin dated Feb. 10, 1944, we referred to "Refrig-O-Master," a device to be installed in domestic refrigerators. The advertising claims for this device included:

- "Reduces operating costs 25 to 50%"
- "Prevents food dehydration"
- "Eliminates needless defrosting"
- "Preserves precious vitamins"
- "Eliminates all refrigerator odors"
- "Adds years to refrigerator life"

In this article we stated that refrigeration experts and scientists had informed the Bureau that some of the claims made were diametrically opposed and contrary to known laws of science. We also stated that a test made for current consumption by the Mechanical Engineering Department of Washington University, at the request of the Bureau, was reported as proving that the device did not cut current consumption. We reported that an investigation would be made by the National Better Business Bureau.

OBJECTION TO TESTS

Since this bulletin appeared, the manufacturer has objected to the manner in which this test was conducted and has pointed out that the device was given no chance to show either current savings or reduction of operating costs because complete instructions for use, which accompanied the device, were not strictly adhered to by the person conducting the test.

Inasmuch as the man who made the test did choose a method of testing in which he did not adhere to the instructions for use of the device in all phases, the Bureau is refraining from any further use or consideration of this test.

Because of the objection to the test, the Bureau contracted for a more extended and elaborate test to be made by a laboratory of national prominence. After the lapse of the long period of time necessary for the conduct of the test, and after receipt of the report, it was discovered that the temperature control equipment, which was part of the refrigerator, did not function properly; therefore, it also was found necessary to disregard this test.

The same laboratory, in whose integrity the manufacturer has expressed confidence, will make another test when a refrigerator which can be certified to as being in proper operating condition, is made available.

SCHEDULE NEW STUDIES

The Bureau also is awaiting the outcome of tests that will be conducted by two New York laboratories for the National Better Business Bureau. The manufacturer has discussed the problems involved in making tests with that Bureau.

The manufacturer also protested the statements of certain refrigeration experts and scientists, to the effect that some of the claims made were diametrically opposed and contrary to known laws of science. The manufacturer contended that no scientist or expert is entitled to pass judgment upon the product unless he actually has conducted tests with the device instead of merely commenting on the basis of theory.

The manufacturer has submitted for the consideration of the Better Business Bureau, reports of certain tests conducted by refrigeration engineers on behalf of hotel chains of national prominence, markets, and other institutions using refrigeration equipment, as well as tests conducted in or under the supervision of three different laboratories, and directly supervised by engineers and scientists connected with those laboratories.

The engineers and scientists conducting these tests stated in their reports that the results substantiated the claims made for the device, with the exception of one test on vitamin

Los Angeles Report

BETTER BUSINESS BUREAU
742 SOUTH HILL ST.
LOS ANGELES 14, CALIF.
ADVERTISING INFORMATION
SERVICE—Report No. 19
"REFRIG-O-MASTER"
CHEMCO PRODUCTS CO.

Los Angeles, Calif.

Chemco Products Co. has voluntarily agreed to suspend the vitamin claims, formerly made in connection with Refrig-O-Master, until such time as there is definite proof that such claims can be sustained.

DROP SOME CLAIMS

The manufacturer has also voluntarily agreed to eliminate savings claims in the cost of operation, and the prolongation of the life of the refrigerator until such time as these claims are no longer in controversy.

The Bureau will not attempt to form final conclusions until it has received reports of the tests which have been arranged for, and which were referred to above. It should be understood that because of the difficulties involved in making complicated and exacting tests of this nature, a considerable period of time necessarily must elapse before such reports are received.

Kenneth W. Hood,
Manager, Merchandise Division

by the Better Business Bureau. Our advertising copy will be built around the functions of Refrig-O-Master in preventing diffusion of food tastes and odors, eliminating the necessity for bowl covers, maintaining food freshness, and reducing the frequency of defrosting."

Many months ago Better Business Bureaus challenged certain of the advertising claims made for Refrig-O-Master. Another test is being arranged for by the St. Louis Bureau. It should be understood that because of the difficulties involved in making complicated and exacting tests of this nature, a considerable period of time necessarily must elapse before such reports are received.

Pending the outcome of these tests, the Los Angeles Better Business Bureau appreciates the cooperation extended by the Chemco Products Co. in voluntarily modifying its advertised claims as stated above.

support the claims made for Refrig-O-Master.

PLAN INDEPENDENT TESTS

At the present time the National Better Business Bureau has arranged with two New York testing laboratories to start independent tests on Refrig-O-Master. Another test is being arranged for by the St. Louis Bureau. It should be understood that because of the difficulties involved in making complicated and exacting tests of this nature, a considerable period of time necessarily must elapse before such reports are received.

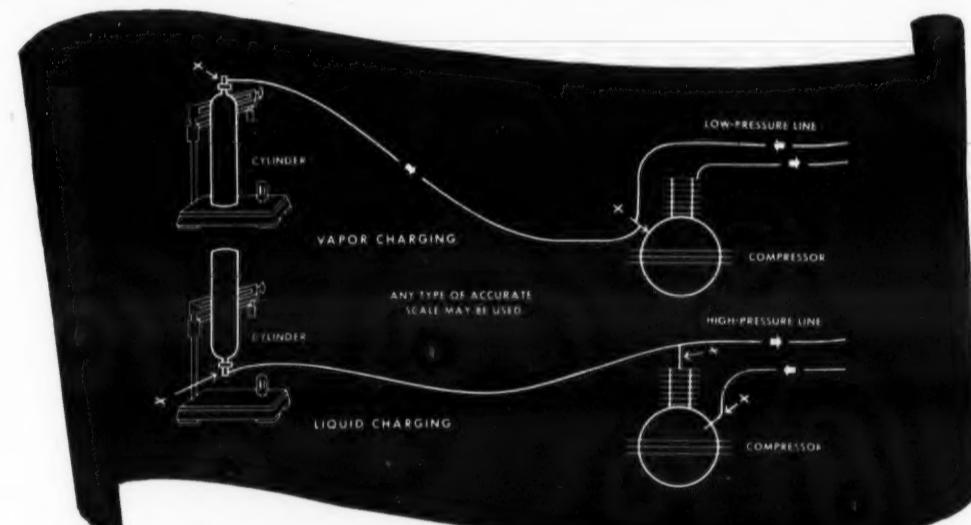
In the interim, one Better Business Bureau released a report of a test which indicated that the claims of Refrig-O-Master were untrue. The test upon which this report was based, however, was not conducted in accordance with the instructions supplied for Refrig-O-Master by the manufacturer. That Bureau will, therefore, not attempt to form final conclusions on that test. Some reports of other tests supplied by the Chemco Products Co., but not accepted as being conclusive, tend to

S. E. Heyerick Named Ilg. Purchasing Agent

CHICAGO—S. E. Heyerick, formerly assistant to the late Walter H. Hallsteen, has been appointed purchasing agent of the Ilg Electric Ventilating Co.

MAINTENANCE TIPS for users of "FREON-12"

No. 4



METHOD OF CHARGING

THE CORRECT WAY of charging a system using "Freon-12" is neither difficult nor complicated. These suggestions will help you:

The cylinder of "Freon-12" should first be weighed (with hood) to determine the gross weight of the cylinder and contents.

The cylinder is next removed from the scale, hood removed and lines connected from cylinder to the system. Valves are opened and the system charged with the required amount of "Freon-12."

CAUTION: To cause the flow of "Freon-12" into the system, the pressure within the cylinder must be greater than in the system, but not more than 168 lbs. gage.

When the system is charged, valves closed and cylinder disconnected from the system, the cylinder is reweighed with the hood. Weight of the cylinder subtracted from its original gross weight determines the net weight of the "Freon-12" charged into the system.

NOTE: Before undertaking to charge a refrigerating system, it is recommended that all threaded connections and valve stem packings on the liquid line from cylinder to charging unit be thoroughly checked for possible leaks. A Halide leak detector torch should always be used for this

purpose. If leakage is evident, steps should be taken to eliminate the leak. Various types of connections, temperature, pressure and time factors necessarily govern the extent to which losses due to leakage may occur. Maintenance Tips No. 1 in this series describes in detail proper methods of detecting leaks.

In making or breaking the liquid line connections between the cylinder and the system, losses approximating 2.5% of the net content of a 145-lb. cylinder may result. However, the practice of using short connections between valves of the cylinder and system will aid in keeping losses low.

Careful attention to maintenance of refrigerating systems will prolong their life and usefulness. Reprints of this and other Maintenance Tips for users of "Freon-12" will be mailed on request. Write: Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington, Delaware.



● Please continue to return empty cylinders promptly ●

BUY A WAR BOND EVERY MONTH

New Parts Wholesaling Establishment



Murphy & Miller, Inc., Chicago servicing firm, has separated its wholesale refrigeration parts business and established it as a separate corporation to be known as the Tempco Supply Co. Streamlined counter in the new establishment is pictured above. The firm represents Kelvinator as a parts distributor and also ABC and Easy washers.

INDIA NOW and POST-WAR

To those manufacturers contemplating extending their export market to rapidly expanding British India, excellent opportunities are offered through the medium of The Industrial & Commercial Trust Limited—an experienced well-established Company, financially sound with extensive ramifications throughout the country—to further that end.

This Company is prepared to consider the sole agency for India for machine tools, cutting tools, plywood and plastics of all kinds. Domestic radio, apparatus and accessories, automobiles and parts, and kindred lines. Bank and other references submitted.

Communicate direct to:

THE INDUSTRIAL & COMMERCIAL TRUST LIMITED
WAVELL HOUSE, 15 GRAHAM ROAD, BALLARD ESTATE, FORT, BOMBAY

Out where Death Runs the Service Stations

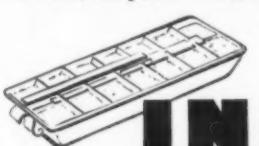


The Inland clutch is a prewar development by Inland which was standard equipment on many well-known makes of passenger cars and trucks. In wartime this same simplified clutch was quickly adapted to the needs of army trucks and military vehicles. As developed by Inland this clutch has only three moving parts which utilize a single diaphragm spring to perform the function of many coil springs and levers formerly used.

Today, the Inland clutch is one of many parts by Inland which are helping army trucks and military vehicles deliver food, ammunition, fuel and medical supplies to our men on the fighting fronts.

INLAND MANUFACTURING DIVISION
General Motors Corporation, Dayton, Ohio.

Inland Products for Victory include Carbines, Tank Tracks, Gun Sights, Helmet Liners, Extinguisher Horns and Rubber and Metal Parts for Tanks, Aircraft, Submarine Chasers, Torpedo Boats, Artillery Lighters and Landing Craft.



INLAND
Manufacturing

INLAND

RUBBER, METAL, PLASTICS

Milwaukee Dealers and Distributors Set Up Basic Merchandise Policy

Believe Slow 'Input' of Appliances Will Help Them Halt Trade Evil Rebirth

MILWAUKEE — A statement of broad, basic policy designed to keep appliance merchandising on clean and profitable levels has been developed by the Wisconsin Radio Refrigeration & Appliance Association following a series of meetings here.

Those in the appliance merchandising field in the Milwaukee area feel that the wartime drought of merchandise wiped out most of the trade evils which beset appliance selling in the prewar years, and they have set out to develop a program that will prevent the re-birth of these evils.

It is believed that such a program will not be too difficult to put into operation since it is likely that the flow of appliance merchandise, when production is resumed, will be slow and gradual. First job of distributors, it is thought, will not be one of where they can sell their merchandise, but rather one of determining who is to get the first merchandise and under what conditions.

To put teeth into its proposals the Milwaukee association is planning to set up a joint committee consisting of an equal number of wholesale distributors and an equal number of retail dealers, with the secretary-manager as a balancing ex-officio

member. The plan is to bring this joint committee together at stated intervals to review the policy program and to change it as conditions demand.

Four distinct groups are involved in the development of a constructive merchandising plan, it was decided by the group of distributors and dealers formulating the program, and for the plan to be successful, it was agreed that each of the four groups must be given fair consideration. These groups are the Public, Dealer, Distributor, and Manufacturer.

The Public

1. Should not be made to pay more for any appliance than the manufacturer's established retail price. Be the name Jones or Smith, the retail buyer should not be charged more or less than his neighbor, irrespective of the product name.

2. Is entitled to full protection in the carrying out of manufacturer's warranty terms by both distributor and dealer.

The Dealer

1. Adherence to fair competitive sales practices to insure fair and legitimate profits, thus permitting

NOW! COOLERS FOR WAR PLANTS



Now they can be sold!
Day and Night glass filler coolers for industrial cafeterias; bubbler coolers for war plants.

**COOLER DIVISION
DAY & NIGHT MFG. CO.**
MONROVIA, CALIFORNIA
FACTORY REPRESENTATIVES
NEW YORK CHICAGO
A.C. Homyer, 682 E. 2dwy. • Marc Shantz, 565 Wash. Blvd.
ST. LOUIS DECATUR, GA.
R.H. Spangler, 3331 Market St. • J.E. Parker, 228 2nd St.

WRITE FOR LATEST DATA

him to fulfill his additional responsibilities to the consumer.

2. To accept his responsibilities in contacting the customer immediately following installation of radio or appliance, and at that time to thoroughly instruct the customer as to its use, thereby eliminating later educational or other unnecessary calls. This would result in substantial savings to both the dealer and distributor.

3. Should not ask for special protection from his distributor in the way of fair trade policies and practices if he himself is not fulfilling his obligation in this respect to the public and to his brother dealer.

4. In fairness to distributors and manufacturers the dealer should at all times display an approximately equal amount of that merchandise which he professes to represent.

5. To refrain from offering pots and pans, dishes, alarm clocks, spiffs, or any other something-for-nothing premium, including excessive trade-in allowances. Practices of this kind are not conducive to a profitable postwar era during which it is predicted by some manufacturers and the press that profits and discounts to distributors and dealers may be lowered. Exceptions are, of course, factory authorized promotions.

6. Dealer principals, salesmen, and servicemen should consistently attend factory and distributor sponsored educational meetings as an aid to their postwar success.

7. To insure fair treatment from distributors, dealers should have the courage to refuse to support any distributor who does not operate in a fair and equitable manner.

The Distributor

1. Will, so far as is practicable, give first consideration when appliances are again available to those dealers who survive the wartime merchandise drought, but subject to all Federal trade restrictions which may be in effect.

2. Will use care in the selection of new postwar dealers. The prime and more important requirements follow: financial status, location, experience, merchandising record, reputation.

3. Will emphatically recommend to his manufacturer the importance of shorter lines and fewer overlapping models.

4. Will definitely oppose and work toward the elimination of all retail selling at wholesale and special discount prices to individuals.

5. Keep the dealer well informed on new developments and provide special training for his sales and service organization.

6. The dealers' best interests will be a first consideration. Everything humanly possible will be done to assist him.

7. Will welcome further suggestions from dealers that will enhance the cooperative effort so necessary to the success of the program.

The Manufacturer

We cannot control the manufacturer's policies, but will urge that he subscribe to the above program.

"Walk In" COOLERS

AVAILABLE NOW TO BUYERS WITH PRIORITY
in any size or type. Amana's long experience in building "Walk-In" Coolers is assurance of efficiency and long service. Insulation of latest models is of corkboard or "Fiberglas" insuring extra economy and top cooling ability.

REFRIGERATION DIVISION
AMANA SOCIETY
AMANA, IOWA



Awarded the Army-Navy "E" with White Star for continuance of excellence in production of war materials.



Boulware of WPB Urges Program of 'Coming Out With the 1941 Models'

May Be Gov't Policy To Check Unemployment, FTC Chairman Indicates Line on Trade Rules

PHILADELPHIA—Manufacturers were urged in an address here by L. R. Boulware, Operations Vice Chairman of the WPB, not to attempt to fulfill all of their grandiose postwar dreams on V-Day plus one, but, instead, to pick up production on the 1941 scale, with a gradual application of the improvements made possible by military experimentation and development.

Speaking at a conference on mobilization for market expansion, sponsored here June 8-9 by the American Marketing Association, Mr. Boulware asserted that the marketing industry had an obligation to "realize the degree to which dependence must be put in the early stages of resumption on old products, and to act accordingly."

BOULWARE DESCRIBES SITUATION

"There are many startling developments of the war," he said, "that will be adapted to consumer purposes in the postwar period. However, in the early stages before tools can be built, demand established, and cost brought down on these new products, the primary—if not the almost entire—dependence for commercial activity and employment opportunities must be on the old prewar products or on minor variations of them. This emphasizes all over again how high the sights must be set in postwar as compared with prewar volume in the products with which we are already familiar."

EMPLOYMENT APPARENTLY KEY

Two of the principal obligations of manufacturers in the postwar period, Mr. Boulware declared, will be to provide enough production to absorb those made unemployed through the shutdown of war plants and to produce at a cost low enough to attract purchasers.

"There is presumably a vast seller's market for most civilian products, but not at prices that are far out of line with old conceptions of value," he warned.

Robert E. Freer, chairman of the Federal Trade Commission, told the marketers that postwar business will be given a favorable "government climate" if it does not attempt to "deny to society the benefits of competitive efficiency."

FREER LISTS TRADE EVILS

Distribution will be so invigorated as to enjoy the rigors of a competitive climate, he declared, "if illegal price cutting, if misbranding, if misrepresentation are stopped; if large distributors are precluded from arbitrarily favoring certain customers; if there is an end to commercial bribery, including breach of contract, bogus independents, of 'lifting' and then advertising a competitor's product at greatly reduced prices to the injury of the product's reputation, exclusive sales and purchasing agreements, rebates and preferential contracts, acquisition of exclusive or dominant control of machinery or raw materials used in manufacturing; if there is an end to stealing copyrights and patented articles, mergers to suppress competition, or interlocking directorates to create monopoly; and if there is an end to combinations in restraint of trade."

HITS CERTAIN PRICING SYSTEMS

Noting current attempts of the FTC to invalidate three systems of delivered prices—the basic point system, the delivered price zoning system, and the so-called "f.o.b. plant freight equalized system," Mr. Freer expressed the opinion that "the postwar governmental climate may be forecast as continued cold toward freight equalization."

Distribution must be more efficient to insure adequate postwar employment, according to the FTC chairman, who said: "Because less has been accomplished before and during the war toward making distribution more efficient, the cutting of marketing costs offers the broader avenue to lower consumer prices, and a higher standard of living for us all." The marketers adopted a resolution

Named To Manage G-E Distributing Branches



PAUL A. TILLEY

Who was recently appointed manager of the appliance distributing branches of General Electric, which have been established in a number of metropolitan centers.

Coe of Chase Again Heads Copper & Brass Assn.

NEW YORK CITY—Robert L. Coe, vice president of Chase Brass & Copper Co., Inc., was re-elected president of the Copper & Brass Research Association at its recent annual meeting.

Miss Bride Wins Top Award For Home Service Activities

NEW YORK CITY—Edison Electric Institute has announced the winners of the 1943 Laura McCall awards given by *McCall's Magazine* for the most outstanding contribution to the war effort in home service activities of electric light and power companies.

First prize was awarded to Miss Esther Lee Bride, home economics director of the Union Electric Co. of Missouri; second prize to Mrs. Selma Andrews, home economics director of the Appalachian Electric Power Co. at Bluefield, W. Va.; third prize to Miss Mary Turner, home service director of the Potomac Electric Co.; fourth prize to J. H. Apperson, home service director of the Texas Power & Light Co.; and fifth prize to Mrs. Lillian McGill, home service advisor of the Central Vermont Public Service Corp. at St. Johnsbury, Vt.

Guler Sales Manager For M-H Division



GEORGE GULER

MINNEAPOLIS—George Guler has been named sales manager of the Air Conditioning Controls Division of Minneapolis-Honeywell Regulator Co.

Guler, who has been associated with the company for 15 years, will make his headquarters at the company's home office in Minneapolis.

Guler will be succeeded in his present position as zone supervisor of air conditioning controls sales in New York by Lou Belford, field supervisor of the Aero Division.

WANTED

2800 Appliance Dealers to Learn the Secrets of Postwar Merchandising



CHARLES LOW

This eminent authority on making retail stores more profitable has fathered many projects for large operators and department stores. He now puts his talents to work on your specific postwar problems.

Can you answer these questions?

What is really the purpose of a window display?

What is the best location for an appliance store?

What is the best way to get people into your store?

How many items of a line should be displayed?

For the answers to these and many other questions, send the coupon below now! There is no cost to you.

WHEN the war ends—perhaps suddenly—will you be ready for the retailing problems that peace will bring? You can be—easily—with this "Planned Electrical Merchandising" series, which is yours for the asking.

Will you gamble 3 cents? A three cent stamp, to mail that coupon below, brings you this practical, field-tested series of bulletins that can well be worth thousands of dollars to you.

They are about your business, not about Hotpoint products. No matter whether you're a Hotpoint dealer or not. They are prepared by a nationally known authority on the subject of appliance merchandising. He writes in your language, takes the mystery out of postwar merchandising and makes it simple to understand.

But don't wait. Do it now! The future of your business may hang on sending that coupon. Bulletin No. 1 will be sent immediately, the others at thirty day intervals. There is no charge. No obligation. Send the coupon now and start preparing for peace!

Edison General Electric Appliance Co., Inc.
5632 W. Taylor Street, Chicago 44, Illinois

Edison General Electric Appliance Co., Inc.
5632 West Taylor Street, Chicago 44, Illinois

Please put me on the mailing list to receive the series of bulletins, "Planned Electrical Merchandising" without cost or obligation to me.

Name _____ Title _____

Firm Name _____

Address _____

BETTER CARE
LESS REPAIR

ELECTRIC
Hotpoint
KITCHENS

REFRIGERATORS • RANGES • WATER HEATERS • WASHERS AND IRONERS
CLOTHES DRYERS • AUTOMATIC DISHWASHERS • ELECTRASINK • STEEL CABINETS

Edison General Electric Appliance Co., Inc. 5632 West Taylor Street, Chicago 44, Illinois	
Please put me on the mailing list to receive the series of bulletins, "Planned Electrical Merchandising" without cost or obligation to me.	
Name _____ Title _____	
Firm Name _____	
Address _____	

There Are Two Sides To Every Question

By E. C. Burgin

*Here the sounds, the sounds that are swelling,
We are free! We are free! We are free!
Hear you, our fetters are breaking!
On her throne noble Liberty see!
In the sight of the world has arisen
A nation glorious rejoicing and free.
Her fair brow with laurels encircled,
The proud Lion of Spain at her knee!*

Thus, with this cry as expressed in the first verse of the Argentine anthem, a New Nation was born! The year was 1810, and to assure her newly won liberty her army after unbelievable struggles made the historic crossing of the Andes under the great liberator San Martin, and the liberty of Chile was won.

THE 'LIBERATOR' WAS HONORED

Then, the same army reenforced with the Chilean, conquered the stronghold of the oppressor by taking their capital in South America, the city of Lima, Peru. This is the reason why the main square in this city is called after an Argentinian, namely Plaza San Martin.

This modest Argentine hero who was called "The Saint of the Sword"

was elected respectively by Chile and Peru as their first president, holding this office only until he could get the natives of these countries to select one of their own leaders. As soon as this was accomplished, Argentina retired to her own boundary without taking an acre of the soil belonging to others.

It is perhaps for this reason that the good Lord has been kind to us. We have blundered, we had our ups and our downs, we have fallen on our knees but we have always found ourselves, and have come up again. No wonder then, that we have a saying down there "The Good Lord must love the Argentine."

BOTH COUNTRIES HAVE TROUBLES

The year now is 1944. The whole world is once more blundering and fighting to get out of the tangle. We in Argentina have our share of the trouble and you here in the United States have yours. While each country shows clearly the symptoms of the sickness that is affecting her stability, each one is misinterpreting these symptoms, so as to create on the public at home the effect, the justification, and approval desired. But to unleash these forces may be as dangerous as a kid playing with fire.

In fairness to the truth, I have to say that after comparing notes in

both countries, the worst danger lies by far in the United States, since far greater forces are at work in this country, forces that people in the U. S. can hardly detect, and yet they can be of such serious consequence.

I am beginning to dread being introduced to people in the States, as invariably the first thing they say when they know that I am an Argentinian:

"What in hell is the matter with your people down there—how come they do not want to line up with us—are they all Nazis?"

And I feel like telling them:

"An what is the matter with you? Three years ago you hardly knew we existed." But much better in fact is what one American who spent a long time in Buenos Aires tells them: "And what in hell did you do to make them like you in the 131 years prior to Pearl Harbor?"

It is a well known fact that the average American is pitifully ignorant when it comes to geography and history. All you have to do is listen to any geographical radio quizzes and the answers given will be more than convincing. The average American boy goes to school with the attitude: "Oh, nuts on geography and history; I don't need it. That stuff is antiquated."

EDUCATION IS ONE-SIDED

These boys grow up and take their place in the world. They produce, due to their own one-sided education, the string of politicians that sold the states on isolation. If they had had their way, we might now all be enslaved or murdered by our enemies.

So now when you are sitting behind your desk, or working at your ma-

Editor's Note: The author of this article is an export factor residing in Detroit, with long experience in the industry. He has just returned from South America, where he noted with increasing alarm the deterioration of our commercial and political relations.

Believing that it is all a matter of misunderstanding on both sides, he tries to present here the viewpoint of Latin America, particularly Argentina. While down there he had an interview published in *La Prensa*, Argentina's powerful newspaper, attempting to present the viewpoint of this country.

We believe his efforts toward trying to influence better understanding between all the nations of the Americas is a start in the right direction. For our future diplomatic, political, and commercial welfare, the public opinion of the peoples of the Americas should present a truly united front.

chine, wondering where your fighting boy may be, and wondering how he is faring, you can only blame yourself that he is there, because you helped to put him there . . . it was you that helped to win the first World War, but it was also you that lost that victory.

It was your indifference to world affairs, together with your lack of understanding of the geographical and political factors at play, plus the fact that you were at home too busy making money, that put him there! No wonder then that the U. S. Foreign Policy is in the confusion accurately described by Walter Lippmann under the title of "Bankruptcy of American Foreign Relations," I quote:

WALTER LIPPmann's OPINION

The President:

"He did not feel able to do what was needed because of the series of furious controversies which divided the nation between 1937 and 1941—over the repeal of the arms embargo, over the transaction of the over-age destroyers and the bases, over conscription, over lend-lease, and over the repeal of the Neutrality Act. None of these costly controversies would have taken the form it did take if the President had been able to present it to a people which realized how serious were their commitments and had acquired the habit of covering their commitments."

"Refrigeration Service Shops should prepare NOW for the heavy demand for their services"

WPB BULLETIN

Maybe in past years you have not been accustomed to stocking parts and supplies to take care of your summer "peak," but this year WPB urges you to anticipate as far in advance as possible. That means just one thing: Go through your

AIRO CATALOG, page by page, and order your needs today. Of course, if you haven't a copy of AIRO's Victory Catalog, we'll send you one promptly. (Please write on your letterhead.)

AIRO SUPPLY CO.

Wholesale
Refrigeration Parts,
Equipment, and Supplies
Dept. B, 2732 N. Ashland Ave.,
Chicago 14, Ill.

ROLE OF THE BRITISH FLEET

No wonder then that without the support of the leading countries the League of Nations collapsed, and one of the first countries that protested violently against the way the League was mishandled was Argentina, withdrawing shortly after their protest went unheeded.

Yet the next question I am generally asked is: "Gee, what else do you fellows in Argentina want? We give you money, and we are committed by our Monroe Doctrine to defend you."

That is true and the sentiments behind this doctrine are certainly noble, but the fact still remains that if you took one look at a map you would see that we are 6,500 miles away from you and that with a handful of soldiers you had at that time, you didn't have enough to protect your own coast. This was vividly brought out in this war when it was impossible for the United States to patrol effectively the Caribbean and the Atlantic Coast.

WHEN PEACE COMES

KOCH

WILL AGAIN PRODUCE COMMERCIAL
REFRIGERATOR EQUIPMENT FOR CIVILIAN USE

NOW SOME SELF-CONTAINED REACH-IN REFRIGERATORS
ARE AVAILABLE FOR THOSE WHO CAN
QUALIFY



Write — Wire — Phone
KOCH REFRIGERATORS
NORTH KANSAS CITY . . . MO.



Designers and Manufacturers of
Thermostatic Expansion Valves
Pressure Regulating Valves
Solenoid Valves
Float Valves



Many Americans died for Freedom today—many more will die tomorrow and in the days to come. Theirs is the greatest sacrifice man can make for his country. For us here at home the greatest effort of the war is demanded now.

Your country is asking you to make a financial investment in the future—isn't it small enough when compared to the efforts of those who fight and die?

Buy more bonds—buy double what you did before, and keep on buying them to the utmost of your ability. Back The Attack—Buy More Than Ever Before!

Views on Trade Relations as Seen By Refrigeration Exporter

(Continued from Page 12, Column 5)
Monroe doctrine, so I like to quote from the book, "The U. S. Foreign Policy" by Walter Lippmann. He writes:

"The lands which the American nation was prepared to defend in war have, since 1823, included the whole of the Western Hemisphere. It is a fact that the Monroe Doctrine has not always been rigidly enforced. The challenge of Napoleon III found the United States unable to respond immediately. Although this threat was liquidated without war, we nevertheless indicated our intention by mobilizing the United States Army. Andrew Jackson did not dispute the British annexation of the Falkland Islands in 1833 or the founding of the British establishments at Belize in what had been Guatemalan territory."

"Perhaps he knew how much the Monroe Doctrine depended upon 'the concert' with Great Britain which Bush and Canning had negotiated, which Monroe, Jefferson, and Madison had approved. Jackson might reasonably have felt that the anomalies were more apparent than real. For only Britain, which for generations provided the principal military support of the Doctrine against all the rest of Europe, has been allowed to improve her strategic position in this hemisphere—the case of the Falkland Islands—and to make a small breach of the general principles—the case of British Honduras."

FRONTIERS ESTABLISHED

"Thus, despite a long series of diplomatic disputes, it is true that the tentative defensive frontiers as laid down and conceived by Monroe have more and more become the accepted frontiers upon which the American nation would fight."

"Unfriendly foreign critics of the Monroe Doctrine have called it the cloak of United States imperialism. Domestic critics have occasionally argued that the commitment was too extensive, and that it should be contracted to the line of the Amazon River and the bulge of Brazil. The question whether the defense of the whole of South America against invasion or intrusion by a non-American power is a vital interest of the United States was raised as late as 1940."

ANOTHER VIEWPOINT

Another view is the one given by an Argentinian answering John Gunther. I quote:

"We do not like the elasticity of the Doctrine that was originated by the Romans when they passed a law forbidding any King of Asia to enter Europe or to conquer any country therein; remodelled by Jefferson in 1814, incorporated by Adams and presented polished up by Monroe in 1823; because the Doctrine did not work at all in the following two episodes. First when the U. S. man-of-war, Lexington, entered the Argentine Falkland Islands on the 28th of December of 1831 violating all principles of international law, arrested our garrison and declared the territory 'Free of all government'; and second, when in 1884 the British sent Captain Onslow on the frigate Clio to take possession of the islands, expelling the Argentine garrison and maintain-

ing the territory by force ever since."

REASON FOR PROTECTION

It is obvious then from the above that if you protect us, it would be because it is vital to the interest of the United States, and not because you give a hoot about us, as the past record shows. Compare President's Hoover's speeches in Argentina and what Congress did to him. Get the facts on the wool tariff, also on the beef embargo.

Thus the only safe policy would be for us to mind our own business, since as late as 1940 you were not too willing, and not too sure that you could afford to go to war should Argentina be attacked.

So when at the Rio Conference we hesitated to cooperate, your press went promptly to work and put us over a barrel, and Argentina was first coaxed and then Nazi-labelled and even threatened (it was even suggested that we should be bombed) but nevertheless we were holding out, even at the risk of creating among the most ill-informed American Nations a feeling of unfriendliness towards us.

Before me is a booklet called "Proud Argentina" by Carleton Beals, I quote this paragraph:

The New York Times for January 26, 1942, contained a front-page article by Charles E. Egan in which he reported that American importers and exporters urged a boycott of Argentina to force it to break with the axis. The piece was pretty obviously a State Department trial balloon, and it was subsequently refuted by leading business men engaged in Argentine operations. But this, unfortunately, was not the first proposal from varied sources that harsh punitive tactics be used against Argentina by the American Government; and indeed a number of very Fascistic and aggressive acts, which need not be enumerated here, have already been perpetrated against Argentina."

PARTNERSHIP WAS NEEDED

But has anybody tried, before using punitive measures, to offer Argentina the necessary guarantees that will safeguard her future? Everybody knows that the United

States and Argentina are competitors, since they both produce about the same agricultural commodities, so why wasn't a partnership offered, instead of one country being, either by hook or by crook, the Boss?

I like to quote another paragraph from Mr. Beal's booklet:

"Some have gone so far as to call Argentina pro-Nazi and to argue that to placate her in any way would be merely another disgusting example of appeasement. But the application of justice, understanding, and economic fair play is never appeasement. Appeasement is giving the bully and the thief a deed of title to ill-gotten gains or the possessions of others, not your own. Argentina has stolen nothing, has committed no aggression, and is merely anxious for her security and prosperity."

A little nation holding out against a big one . . . never! So export licenses were cancelled, American boats practically stopped calling at Buenos Aires, and as the black sheep we were not entitled to lend-lease or armaments. And the tension in Argentina grew, as someone so well said, to the point that if you were holding a light bulb between your fingers, you expected it to light.

But since the "Good Lord loves the Argentine," He gave us the food, and we found the ships, and money began flowing in from all sides. But

the tension was still growing, ambassadors were called home and others exchanged, and pressure was increased until the crash came in the form of a revolution in Argentina. I again quote Mr. Beal:

ANTAGONISM IS UNFORTUNATE

"It is indeed unfortunate for us that Argentina's proud attitude and our own failure to cooperate have led the two strongest nations in the Western Hemisphere into covert antagonism, that it has isolated Argentina from the New World concert of nations. It is unfortunate that at a time like this it should have led to any international scheme to overthrow the present Argentine government, for that would have proved merely a boomerang, something never to be pardoned by the Argentine people, and in the long run frightening to all Latin America. All this is even less unfortunate from a war standpoint than it is for the future development of continental economics, good neighborliness, and solidarity."

Riding the presidential bronco now became rough, and one rider was thrown after one day, the other after some months. . . . In the meantime the Argentine people back of it all look with bruised bewilderment toward the United States and with a faint ray of hope towards England.

(To Be Continued)

Heads Penn Switch Branch



OTTO G. TINKEY

ST. LOUIS—Otto G. Tinkey was recently employed by Penn Electric Switch Co. as manager of the company's St. Louis branch office located at 4030 Chouteau Ave.

Before joining Penn, Mr. Tinkey was the St. Louis representative for Copeland Refrigeration Co. and was also engaged as consulting engineer for various St. Louis manufacturers.

• Here's some "help" you can hire . . .

• to improve the operation of your condensing units

CONDENSING UNIT MANUFACTURERS: Here's some "help" you can hire, and they won't have to get a release from the War Manpower Commission—they can start to work for you right now!

Yes, Temprite's Oil Separators and Accumulator-Interchangers, together with their engineers, are ready to go to work for you anytime you need them—whether it be for immediate or postwar needs.

For example, auxiliary equipment such as oil separators and heat exchangers play an important part in the operation of low temperature refrigeration equipment, but very often not

enough consideration is given to these important items, in the design and construction of basic equipment.

This is where our engineers can be of help to you in working with your designers on the application of our standard Oil Separators and Heat Exchangers. Where these items do not meet the exact requirements our engineers are able to evolve special designs for your individual problems.

If you are redesigning your condensing units perhaps our engineering staff can be of assistance. A letter today to our sales department will bring you full details.

TEMPIRE PRODUCTS CORP.

Originators of Instantaneous

Liquid Cooling Devices

DETROIT, MICHIGAN

43 PIQUETTE AVENUE



ORDNANCE TODAY—

BETTER REFRIGERATION TOMORROW

The fine tolerances of ordnance production come relatively easy to men trained in the modern M. & E. plant at Lancaster. The awards given were a natural outcome of manufacturing standards long established—and which M. & E. hope to continue in force when refrigeration manufacture is again resumed. The more important job today is to contribute to total Victory.



MERCHANT & EVANS COMPANY
PHILADELPHIA, PENNA. • Plant: LANCASTER, PENNA.

Ballantyne of Philco Explains Why Television Growth Can Come Rapidly With Peace

PHILADELPHIA—Much of the fundamental work to form the basis for the postwar television industry has now been completed, and over the years, television should duplicate and indeed surpass the remarkable record of growth and progress of radio, it is predicted by John Ballantyne, president of Philco Corp., in a letter to stockholders accompanying June 12 dividend checks.

"When television standards have been established by the Federal Communications Commission and the material situation eases to the point where new equipment can be produced, television promises to grow rapidly in public esteem and popularity," Mr. Ballantyne believes.

A New York to Philadelphia television relay transmitter link, connecting the two cities for video broadcasts, was officially dedicated with appropriate ceremonies on May 25, Mr. Ballantyne pointed out. This

new link, installed near Princeton, N. J., replaces previous experimental installations and marks the beginning of the first regularly scheduled television relay system capable of providing commercial service in the United States. It is now in operation every Monday night to make the New York programs of Station WNBT available to the audience of Philco Television Station WPTZ in Philadelphia.

"The new television relay, developed by Philco engineers, is the first of its kind, and is capable of providing dependable, high-quality service at all times and under all atmospheric conditions," Mr. Ballantyne states. "It is entirely possible that similar links, which can be constructed at a cost of about \$15,000 each and located approximately 50 miles apart, may form the basis for a nationwide television system in the postwar period."

Commercial and Domestic REFRIGERATOR HARDWARE



NATIONAL LOCK COMPANY

ROCKFORD, ILLINOIS

Truesdell Speculates on What Kind of Dealer Manufacturer Will Select and Vice Versa

Should Be 'Minimum Number For Share of Market; Guarantees Defended

BIRMINGHAM, Ala.—The kind of a manufacturer the electrical appliance dealer should tie on to, and in turn the kind of a dealer that the manufacturer should favor—these were among the questions discussed by Len. C. Truesdell, assistant commercial manager of The Crosley Corp., Cincinnati, in an address on "The Appliance Business Now and In The Future" before the Alabama Retail Furniture Association.

THE DEALER'S CHOICE

Mr. Truesdell said he thought the retailer "should select brands that have been established in the minds of the buying public for a number of years." However, he warned that customers would make their selection on the basis of price, styling, exclusive features, and other advantages offered by the various products at the time of purchase and will not be concerned particularly with the fact that certain lines had certain features several years ago.

It is important, Mr. Truesdell added, for the dealer to select a resource that will provide him with a program "sufficiently flexible and aggressive to meet the new and varying competitive conditions which

will arise in the business." He declared that "the manufacturer that will provide you with a merchandising program that is modern in every respect can become one of your most important assets."

PATHS FOR MANUFACTURER

As for the manufacturer, he said, there was two roads he could travel, one being to appoint all the dealers he could so as to get the largest share of the postwar market. But he contended that "the soundest road to travel is to appoint the minimum number of retail outlets in any given market that will obtain a fair and reasonable share in the industry sales in that market for the manufacturer." This he said would give the dealer a chance to make a profit.

The speaker divided appliance selling into three periods as follows: the period until the end of the war, then 18 months to two years after the war, and finally the long-range future.

PHASES OF POSTWAR SALES

Mr. Truesdell said the third phase was the most important and during this period "the manufacturer you tie on to should be prepared to bring new developments in products which will obsolete appliances at a faster rate. This will be necessary," he continued, "because when we reach this third phase, we will in all probability have a saturation of 80% or more in all of the important appliances and it is going to be necessary to create faster obsolescence if you are to maintain your volume and your profits." Here again he said the manufacturer which the dealer selects should be able to furnish a flexible hard-hitting merchandising program.

FURNITURE DEALER'S PLACE

The furniture dealer, Mr. Truesdell said, in the past was the most important type of dealer in appliance distribution, but not on account of his individual performance but in the number of dealers and the volume turned in. He added the furniture dealer had not done as good a job as he was capable of doing.

During the question period one dealer raised the matter of brands to be handled by the chains and also

discounts to them. He said he didn't know any manufacturer interested in the business of the expanding tire and auto accessory chains and he ventured the opinion that such chains would handle private brands.

THE WORTH OF GUARANTEES

One dealer complained about having to service the manufacturer's five-year guarantee on refrigerator units. Mr. Truesdell said no dealer would want to sell a unit which might develop a \$50 to \$60 repair bill within a year. He added this five-year guarantee made many manufacturers stop and think before putting out a unit which didn't measure up in all respects. He said the sealed refrigerating unit had definitely proved itself in service.

Schafer Is Hotpoint Western Manager



WARD R. SCHAFER

Recently named regional sales manager, western region, Edison General Electric Appliance Co.

CORDLEY
THE BATTLE PROVEN
Electric
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• THE PROVING GROUNDS OF WAR offer dramatic confirmation of the ability of Cordley Electric Water Coolers to withstand hard knocks. Supplied since 1942 for shipboard use to the Navy (Contract NXs 9982) and to the Marine Commission. These same Battle-Proven Coolers are now available for general use on land. Write for facts.

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Manufacturers of Water Coolers Since 1888

Blue Ribbon Milk Coolers AVAILABLE

Write today, without fail,
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REFRIGERATION

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PENN BRASS & COPPER CO., INC.
ERIE, PA., U.S.A.

OVER THE HUMP! America's miracles are no longer news—its record in this war is a succession of miracles. But there is one accomplished "impossibility" which deserves special mention: *The job our Railroads are doing!*

Shortage of equipment and depletion of man-power notwithstanding—they have climbed the grade with "know-how," courage and patriotic devotion.

Raw materials have been delivered to our war industries—on schedule. Finished weapons have appeared—when and where wanted—as if by magic.

Millions upon millions of troops have been

transported punctually and without incident. Meanwhile, somehow, our civilian needs have been met.

All in all, a feat of logistics that staggers the imagination!

HOUDAILLE* salutes the *Railroads of America* for distinguished service, above and beyond the line of duty. Never before has their place in our national economy, in our way of life and in our hearts been so secure.

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roads in the past. We are serving them now.

We hope increasingly to serve them in the great, new America, after this war is over.



HOUDAILLE-HERSHEY CORPORATION

Executive Office—Detroit

Manufacturers of precision parts and equipment for the automotive, air craft, railway, maritime, mechanical refrigeration, radio and other industries

*Pronounced: "HOO-DYE"

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Inclusion of Appliances In One-Payment FHA Mortgage To Boom 'Kitchen Sales'

Scaife Also Sees 'Dissatisfaction' as Promoting 'Complete Unit' Plans

CHICAGO — A million "display rooms" or electrical appliances in new homes—"model" kitchens that will satisfy the owners of America's present 27 million old-style kitchens—this will furnish the impetus to set in motion the long overdue avalanche of remodeling; making more sure a postwar appliance market by which dealers will sell billions of dollars in equipment to replace obsolete appliances. Thus H. J. Scaife, Edison General Electric (Hotpoint) Appliance Co. kitchen sales manager sums up the effect of the "completely equipped" new home, in the June issue of the "American Builder."

NOW OKAY IN 42 STATES

Two major obstacles have stood in the way of realization of a "complete home" in the past, Mr. Scaife says. These are (1) inability to include appliances under FHA one-payment mortgages, (2) willingness to use old appliances in new kitchens because "planning" was neglected.

These obstacles have been overcome, (1) by rulings in 42 states permitting inclusion of appliances in one-payment mortgages, (2) rapid progress in improving design of kitchens to make new appliances necessary, he writes.

"With these new conditions, plus the high per cent of over-age appliances in homes today, Hotpoint executives believe that this step will greatly enhance the salability of the company's entire line of equipment in the vast replacement market. The pressure created by everybody getting new and modern kitchens will flood appliance dealers with requests for estimates on remodeling.

MORE WILL SELL KITCHENS

"A recent dealer survey indicates that 48% of all appliance dealers will sell steel cabinets, as well as electrical appliances, this means that progressive dealers will, in cooperation with distributors and utilities, install complete kitchens.

"While the vast remodeling and building program is getting underway in cities, towns, and on farms, each newly installed complete kitchen will further the idea of new utility and beauty in this important room. Thousands of "show rooms" will be built and demonstrated by their owners to friends who will want the same kind of kitchen in their own old home."

The buyer of a \$3,500 home in the postwar era, it is claimed, will be enabled to secure as part of his home the following built-in or plug-in equipment for an additional monthly payment of \$2.40—or 8 cents a day: Steel cabinet sink, electric range and refrigerator, and adequate steel wall and base cabinets. There will be also an additional down payment on the home of from \$40 to \$50.

"In 1942 the FHA adopted a new underwriting procedure which permits built-in and plug-in equipment to be included in the same mortgage which formerly covered only the home itself without the equipment. The laws on chattel in 42 states have already been changed to permit the inclusion of this equipment in one mortgage."

TYPICAL HOME ANALYZED

Accompanying the article by Mr. Scaife is a concrete illustration of the application of this principle to an actual home to be built in Niagara Falls by builder Walter S. Johnson.

In cooperation with the "American Builder," Mr. Johnson employed Architect John N. Highland to create a modernized-conventional style of home to illustrate exactly what the completely equipped postwar home will look like and contain. This home would be priced at \$7,200 with out equipment.

The equipment to be installed includes a modern cabinet sink with garbage disposal, electric range, refrigerator, dishwasher, and steel wall and base cabinets. The down payment would be increased \$100 on the home illustrated for this equipment. The monthly payments without complete kitchen (including interest at 4 1/2%) would be \$56.91; with the \$800 added for a complete kitchen, the payments would be \$62.63—a difference of \$5.72 per month.

"This fits ideally into FHA's personal credit requirements," states the article. "FHA knows how much strain can be put on a man's budget when it approves him for the purchase of a home. It has no control over his purchases after he is ap-

proved. Often he goes into the market and buys this same new equipment.

"On the most favorable credit terms, he would pay a finance charge of \$120.10, and he would have an additional monthly payment of \$30.67 for a period of 30 months. Add this to his monthly payment on the house and you get \$87.58 compared to \$62.63. In many cases the latter figure would be the maximum for which FHA would approve him, the maximum he should spend without defaulting.

CERTAIN OBJECTIONS LIKELY

"The argument will be raised that people who already own some items of this equipment will object to the plan. The answer is obvious, as pointed out by several builders. New equipment has been impossible to buy during the war and women will want, if not actually have to have, the new and modern. To American women today, a home is only as modern as its kitchen.

"Executives of Hotpoint believe that this step will greatly enhance the salability of its complete line of equipment in the vast replacement market in old homes, that their dealer organization will enjoy a harvest in this market by virtue of this equipment."

C. E. Lewis Named To Manage Perfex Controls Division

MILWAUKEE, Wis.—Carroll E. ("Borie") Lewis has joined Perfex Corp. as vice president and manager of the Controls Division.

Mr. Lewis comes to Perfex from the Delco Appliance Division of General Motors Corp., where he has served as general sales manager for the past five years.

He originally joined the Frigidaire Division of General Motors, later becoming the air conditioning sales manager of Delco-Frigidaire Conditioning Division.

A pioneer in the air conditioning field, Lewis has served as a consultant and as head of his own company. He has been president of the Oil Heat Institute since 1941, and has also been active in the Stoker Manufacturer's Association.

T. C. Davis Appointed To Rubber Mfg. Group

DAYTON, Ohio—T. C. Davis, vice president in charge of mechanical sales planning and experimental sales of the Dayton Rubber Mfg. Co., was appointed a member of the executive committee of the Rubber Manufacturers Association at the April meeting held in Cleveland.

ELECTRIC WATER COOLERS

ALL SIZES FOR NAVY AND LAND USE

MEET GOVT. SPECS.

QUICK SHIPMENT

Exclusive Dealer Franchise

MFD. BY

THE REVELATION CO.

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WANTED REFRIGERATION ENGINEER

CANADIAN FACTORY OF WELL KNOWN AMERICAN CORPORATION REQUIRES EXPERIENCED REFRIGERATION ENGINEER PREFERABLY MAN WITH EXPERIENCE IN DESIGN OF ICE CREAM CABINETS, SODA FOUNTAINS, FROZEN FOOD CABINETS, AND GENERAL COMMERCIAL EQUIPMENT. MAN SELECTED MUST BE ABLE TO CREATE NEW AND IMPROVED DESIGNS IN LINE WITH MARKET AND CUSTOMER DEMANDS. TO SUCH A MAN THE OPPORTUNITY NOW AND IN THE POST WAR FUTURE IS EXCELLENT. IN REPLY, GIVE FULL DETAILS OF YOUR TRAINING, EXPERIENCE, AGE AND PRESENT EARNINGS. BOX 1565, AIR CONDITIONING & REFRIGERATION NEWS.



Attract and hold customers by using G-E FACTORY SERVICE PLANS For fractional-hp motors

ONE sure-fire way to attract and hold trade, to maintain a steady volume today and to build for the postwar period, is through the dealer-proved G-E Factory Service Plans. If you're prepared to repair or replace inoperative motors quickly, economically, and expertly, you can attract more service business to your store; you can get your share of this increasing wartime business.

These Factory Service Plans enable you to make repairs and replacements on practically any G-E fractional-horsepower motor, regardless of the type or make of appliance on which it is used. The work is done quickly and reasonably—with convenience and satisfaction for your customers, and at a profit that you know beforehand. But more important, there's no need for you to train repairmen—G.E. does the work. You render the service without actually making the repairs.

Simple, isn't it? Profitable, too! Ask your distributor to tell you more about these Factory Service Plans—or fill in and mail this handy coupon. Start and keep service customers coming your way. General Electric Company, Schenectady, N. Y.

GENERAL ELECTRIC
MOTORS

BUY WAR BONDS

These Factory Service Plans will help you build extra business NOW

1. THE EXCHANGE PLAN Covers the most commonly used types of G-E fractional-horsepower motors. Makes possible immediate replacement from G-E field stocks or from your own buffer stock. Replacement motors carry the G-E new-motor warranty, except for finish.

2. SPECIAL REPAIR SERVICE PLAN Provides for factory repair of semi-standard G-E f-hp motors not covered by THE EXCHANGE PLAN, at established prices. Enables you to make quick, accurate, on-the-spot estimates. Repaired motors carry the G-E new-motor warranty, except for finish.

3. REGULAR REPAIR PLAN Covers f-hp motors not included in either of the other two plans, except extremely old or obsolete models. Inspection is made at the factory, and a cost estimate is submitted before work is started. These motors also carry the G-E new-motor warranty, except for finish. This plan rounds out this G-E service and enables you to handle repairs on practically any G-E fractional-horsepower motor.

General Electric Company, Section B700-70C
Schenectady, New York

Please send me a copy of your booklet which describes your FACTORY SERVICE PLANS for fractional-horsepower motors.

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Company.....

Address.....

City.....

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Good Neighbors, Good Customers

WASHINGTON is buzzing these days about the jump Russia and Britain are getting on us in stimulating postwar foreign trade. Much of what has seemed to be erratic political behavior on the part of Churchill and Stalin in recent months can be explained in this light.

Our policy is to get tough with everybody who isn't fighting on our side. Maybe that's the best policy—for now. But the British and Russians pursue a "soft" policy toward the neutrals, and a most friendly policy toward the various refugee governments.

BRITAIN IS FISHING NOW TO CATCH FUTURE MARKETS

It's Britain's position that before too long she will want the goodwill of Spain, Italy, France, Sweden, and Argentina because she will need to trade with them. Our own foreign traders are seriously concerned over the great advantages Britain is liable to gain through this policy of cultivating the friendship of future customers now.

In this issue we print some remarks of a man who grew up in the Argentine, and who has just returned to the United States after several months spent in Latin America. He reports that some of our Latin American friends are worried over our large military establishments down there, our rough-shod commercial methods, our "throwing our weight around."

WHAT'S WRONG WITH THE GOOD NEIGHBOR POLICY?

A fortnight ago in Washington the writer heard a representative of the Department of Agriculture—who had just returned from two years spent in Brazil—spend two hours giving an off-the-record bill of particulars about our loss of goodwill in Latin America.

They'll Do
It Every
Time
By
Jimmy
Hatto



LETTERS

SERVICEMEN CAN HELP MFRS. AVOID HEADACHES

Detroit Edison Co.
Detroit, Mich.

Editor:

Re: New Manufacturers in
the Electrical Appliance Field

A number of manufacturers, prompted by the huge postwar demand for electrical appliances, are planning to enter this field. Some of these manufacturers have been making radios, others have been making less related products.

As all manufacturers know, new designs are always afflicted with "bugs" which the most skilled designer is unable to foresee. These bugs in the new electrical appliances are going to cost someone some money, some time, some prestige. Much of this loss can be obviated by recourse to the experience of others.

There is an enormous wealth of experience in the hands of servicing agencies throughout the country that is available to any manufacturer who asks for it. Many power companies have large appliance repair shops. There are many first class independent repair agencies in all the major cities. Large retail stores have connections with repair shops or have their own.

Your publication would be doing a great service to your subscribers and to the industry if you can sell electrical appliance manufacturers on a much closer cooperation with service groups. There is no sense in making old mistakes over again.

G. J. PIERRE,
Engineer

CONFUSING 'FREEZERS' WITH 'STORAGE' CABINETS

Wilson Cabinet Co.
Smyrna, Del.

May 22, 1944

Editor:

Your Bulletin Edition of AIR CONDITIONING & REFRIGERATION NEWS of the May 15 issue has just been received. I would like to comment on the suggestions made by Nema regarding a standard term or name for home freezers also known as farm freezers.

The writer recently wrote to Mr. Frederick W. Smith, Chief of the Special Equipment Branch, General Industrial Equipment Division of the War Production Board, and suggested that freezer cabinets for home and farm should be divided into two classifications, as follows:

(a) Frozen Food Storage Cabinets (Home) or Home Frozen Food Storage Cabinets.

(b) Farm and Home Freezers or Home Freezers.

The reason for suggesting the two classifications is to distinguish between a frozen food storage cabinet, which has a refrigeration capacity for the storage of frozen food only, and the freezer cabinet which has a refrigeration capacity to freeze and store food products. In the past a great deal of confusion and misrepresentation has occurred over these two types of equipment.

There will be a large number of frozen food storage cabinets designed and sold for the storage of frozen foods only in the home. The refrigeration capacity of these cabinets

would not accommodate the freezing of food and a distinct name should be applied to such cabinets to avoid confusion and misrepresentation by the manufacturer and the seller. The majority of this type will be cabinet chests used in the home as an auxiliary to the user's storage locker or for merely the convenience of storing frozen food products purchased locally. Many of these cabinets have previously been sold in the name of freezers and the users have been very much disappointed that their cabinets or chests did not have the capacity to freeze. In fact, considerable food has been wasted due to this misunderstanding by the user.

For this reason and others not mentioned, I think it would be advisable to definitely distinguish between the frozen food storage cabinet for the home and the farm or home freezer cabinet. The name "Home Freezer" would not distinguish between the storage cabinet and the freezer cabinet. When the word freezer is used it should designate that the refrigeration unit has a specified freezing capacity. In our post-war program, we plan to divide our equipment carefully in these two classifications so that our distributing organization will avoid any misrepresentation to the ultimate user.

Trusting that the above suggestions will be of interest, and awaiting your any comment, I am,

J. E. WILSON, Jr.

'YOU CAN'T PLAY BALL ON BOTH SIDES OF THE FENCE'

E. E. Pauly & Co.
Cheboygan, Mich.

Editor:

Having been in the refrigeration selling business as a small town dealer since 1921, I sincerely hope that the nationally known manufacturers of House-Hold Refrigeration will not make the same error in selling their House-Hold Refrigeration to Mail Order Houses after the War, and expecting to have a nationally known selling force go out and compete with same, for almost double the price, because of the few changes on the hardware, etc. Common sense tells all of us independent dealers in the refrigeration business that "YOU CAN'T PLAY BALL ON BOTH SIDES OF THE FENCE."

Any nationally known manufacturers of House-Hold Refrigerators should not "KILL THE GOOSE THAT LAYED THE GOLDEN EGG."

It's simply a question of having a nationally known selling force or a Mail Order House to represent the product because the public is fast catching on.

E. E. PAULY

THAT'S RIGHT!

San Antonio Vocational & Technical School
637 Main Ave.
San Antonio, Tex.

Editor:

Enclosed please find my check for four dollars (\$4.00) for a years subscription to the REFRIGERATION NEWS.

Send the News to Ronald E. Anderson, Refrigeration Machinists Mate, 2nd Class, MMR2C, U.S.S. LaSalle, Fleet Post Office, San Francisco, Calif.

He is one of my former students who is doing a "Bang-up" job as a Refrigeration Maintenance Man on board his Ship.

I know that the "News" will keep him informed.

W. F. ZETTNER, Instructor

Natkin Reports Big Backlog of Orders On Air Conditioning

KANSAS CITY, Mo.—The virtual ban placed by the government on the manufacture and installation of air conditioning systems late in 1942 forced Natkin & Co. of Kansas City to lines in which its engineers could apply their experience.

In the last 18 months the company has entered various fields, some foreign to air conditioning, in an effort to keep going until more normal conditions return. Then, as explained by Henry E. Gould and Emil Haas, partners, the concern will return to the first interest—air conditioning.

War work has accounted for more than 90% of its business since 1942. The first full year of the shift—1943—the firm's volume ran well into seven figures. The last big air conditioning job completed by the company early in 1943, Mr. Gould said, was for a war plant which covered eight city blocks.

"Installation of huge gasoline storage and distribution systems for air bases throughout the Kansas City area provided a substantial volume of business last year," he said.

Heating units and mechanical piping systems also were installed by the company in many war plants and at air bases. Its St. Louis manufacturing plant produced over 300,000 fire extinguishers for the government and made thousands of gas cooking stoves for defense housing projects. Subcontracts were accepted from the leading airplane manufacturers for dozens of different parts, from conduits to doors.

"In our case," Mr. Haas said, "air conditioning top the list of postwar plans which have been completed."

Owners of residences, apartment houses, and industrial plants are expected to be more receptive to the improved units which will be offered after the war, he believes. Evidence of the growing appeal of cooling systems is seen in the company's present huge backlog of orders which now runs into the millions of dollars.

The cost of the new units will vary but should be within the reach of the average home owner, Mr. Gould said. Complete air conditioning plants, however, still will be rather expensive for the residential field and probably will be limited for some time to homes costing over \$10,000 he believes.

"It will be some time before mass production of air conditioning units will be made available to permit 'package selling.' The emphasis still is on custom-built jobs," Mr. Haas believes.

Industrial plants have found it economical and advantageous to install air conditioning and more will follow the trend after the war, he said. Retail establishments were going in for cooling systems on a wide scale before the war interrupted this business, but after the war many stores will install them because of competitive reasons, he said.

United Commercial Sales New L. A. Wholesaler

LOS ANGELES—United Commercial Sales Co. of this city, commercial refrigeration contractor, is setting up a jobbing-distributing business here and will handle replacement parts, installation materials, and package units as soon as conditions permit, for refrigeration service organizations, the firm has just announced.

A. H. Reinach will be manager of the jobbing division and will supervise all activities of the company along this line. Mr. Reinach had been with the priorities division of the War Production Board here and prior to that had been connected with the refrigeration industry for a number of years, having been connected with the commercial refrigeration department of Kelvinator.

United Commercial Sales Co. is headed by Ted Chamberlin and has been in operation for six years, concentrating on the more heavy-duty type of commercial refrigeration. The firm does no servicing.

Part of the plan for the jobbing-distributing division is to sell "over the counter," but at wholesale, a complete line of packaged items such as beverage coolers and reach-in refrigerators, said Mr. Reinach.

How Air Conditioning Protects Cultures In Penicillin Laboratory

BEDFORD, Ohio—Air Conditioning and refrigeration are playing a major, indispensable role in the production of the miracle drug, penicillin, in the new government laboratory being operated here by the Ben Venue Laboratories of Pittsburgh.

Production of penicillin may strike the layman as a ridiculously simple process—growing of virtually the same kind of molds one finds on stale bread or cheese and extracting the penicillin notatum from it. And yet, an entire day's work of an organization like this Bedford plant could be destroyed in a few fleet minutes should any of the many con-

taminating organisms found in the air find their way into the penicillin fermentations.

Penicillin, hailed as one of the greatest bacteria killers in general diseases, osteomyelitis, pneumonia, diphtheria, gas gangrene, and some of the most virulent types of blood poisoning, in turn can be quickly destroyed by some of the common spores in the air.

An extensive air conditioning system installed throughout all production parts of the Bedford penicillin plant is eliminating these undesirable contaminants and aiding science in the production of this great heal-

ing power so vital to American fighting men and civilians alike.

The systems create for science the "weather" conditions best suited for growing of the molds. On a hot day, as on a cold day, the molds will not grow properly. Air conditioning and refrigeration controls the temperatures in rooms and incubators at the desired 75° F. A temperature of 100° F., for instance, would destroy all the penicillium notatum in the plant within an hour.

Losses ran high before air conditioning and refrigeration came to the aid of penicillin pioneers. In the final stage, penicillin has to be packaged bone-dry, owing to the fundamental instability of penicillin in aqueous solution. If this drying operation is carried out at ordinary temperatures, very extensive decomposition takes place.

Allen-Bradley Changes N. Y. Office Location

NEW YORK CITY—Allen-Bradley Co., manufacturer of electrical controlling apparatus, announces the removal of its New York offices to 155 East 44th St. C. N. Calkins remains in charge as New York district manager.

Now It's Martin Kent At Alter N. Y. Branch

NEW YORK CITY—Martin Krawczyk, manager of Harry Alter Co.'s New York City branch, has changed his name legally to Martin E. Kent, he announced recently.

It's Time To Tell About REFRIGERATION'S HIDDEN SERVICES

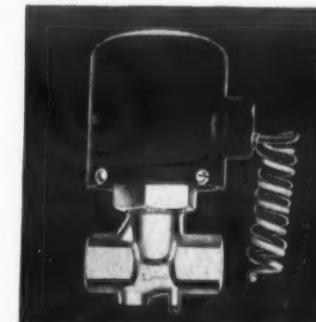


*Take CANDY
for instance...*

REFRIGERATION in the candy plant protects practically every operation—tempering, setting, processing, dipping, enrobing, curing, storage, wrapping, and others. Each operation has its own special requirements in temperature and humidity. You'll find cold ranging from 10° to 70° F., humidity from 40% to 80%—all under absolute control.



If you've ever tried to handle chocolate creams exposed to hot summer heat, your chocolate-smudged fingers will show you one reason why refrigeration is important here. And it must be controlled. Too rapid cooling causes checking and cracking, and if centers are too warm or too cold, "bloom" or graying results.



A-P Solenoid No. 73RJ—Capacity to 5.4 tons Freon. Others 50 tons Freon

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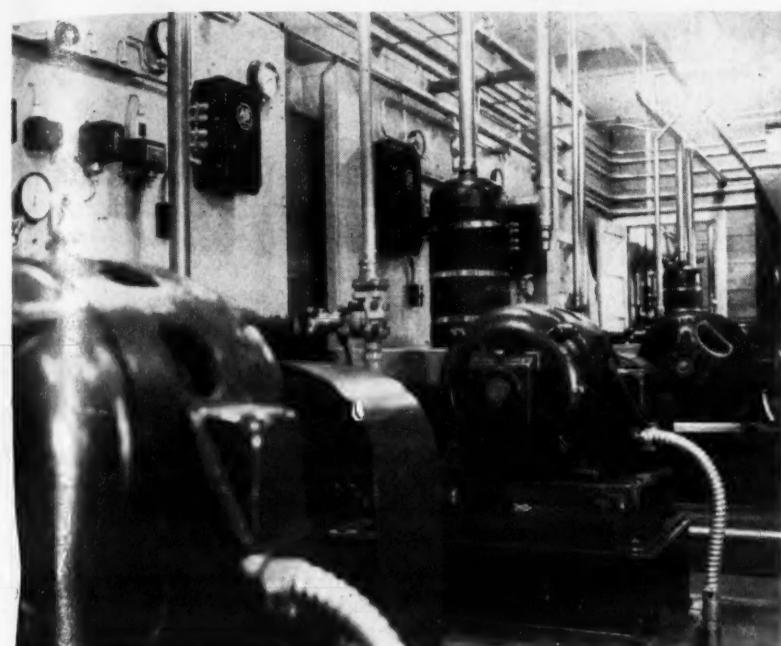
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Regulating Valves — "Trap-Dri" Sys-
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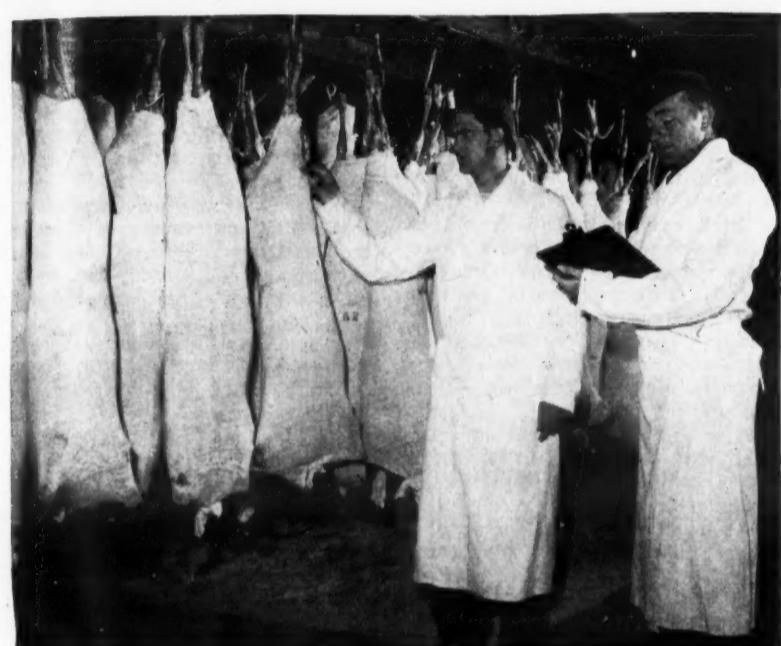
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— USED AND RECOMMENDED BY LEADING SERVICE ENGINEERS

Refrigeration & Food Fight for Freedom



Four 20-hp. Vilter compressors, hooked up in pairs, provide the refrigeration for the big warehouse at the Edmonton, Alberta end of the Alaska highway. Two other large warehouses have been built along the highway.

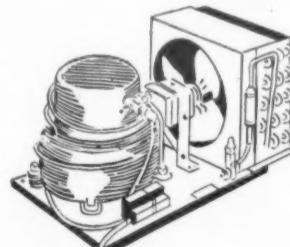


Food, along with other foods stored in warehouses and portable units along the Alaska highway, keeps soldiers and civilian workers well fed.



BALANCE IS IMPORTANT IN HERMETICS TOO!

All of us here at Tecumseh are very conscious of the art of balance—we are fully aware of its supreme importance—we're building condensing units that are in perfect balance—built to tolerances in the ten-thousandth of an inch, resulting in smooth perfection of movement, comparable to the finest timepiece—without noise and without vibration.



However, the condensing unit must also be in perfect balance with the final refrigeration system, otherwise all our efforts toward perfection in the condensing unit are lost. And that's where our engineers excel.

Before settling on post-war designs consult "Chieftain—The leader in Hermetics." For complete data write our sales department.

Chieftain

TECUMSEH
PRODUCTS CO.
TECUMSEH, MICHIGAN

Alaska Highway Is Dotted With Warehouses, Portable Coolers to Feed Army & Civilians

EDMONTON, Alberta, Canada—Three large refrigerated warehouses and several small portable units have been established along the Alaska Highway by the U. S. Army Northwest Service Command to store and preserve foods for troops and civilian contractors.

The warehouses are located at Edmonton, Dawson Creek, British Columbia; and at Whitehorse, Yukon Territory; and at relay stations along the highway there are small eight by ten portable storage units operated either by a 3-hp. Wisconsin gas engine or the attached 1-hp. electric motor, if electricity is available.

AUTOMATIC HEATING, TOO

The large plants have automatic heating as well as refrigeration. The heat cuts on when the temperature goes below the desired settings on refrigerator controls. This is necessary in order to maintain even temperatures in the storage rooms, since north country temperatures have slumped to 72° below zero.

Edmonton cold storage warehouse is 125 ft. long by 75 ft. wide. The machine room, 34 ft. by 16 ft., contains two banks of compressors as well as two evaporative condensers, one for each machine bank.

Receiving room, which runs the full length of the building, parallels the railroad spur for easy unloading. Four-foot vestibule doors lead into this room from the loading platform. The receiving room is cooled by

blower-type evaporating units at each end.

Four Palin refrigerator doors lead into the storage rooms: fruit and vegetable room in which a temperature of 35° is maintained; butter and egg room which also is held at 35°; one frozen-food room which operates from zero to 10° above; and the meat cooler which operates at 31°.

The meat room is equipped with overhead rails that run from the receiving dock into the room and out into the issue room. The rails, which are equipped with scales at both ends and switching equipment, facilitate easy handling of the meats.

Along the other side of the warehouse is the issue room, where issues of food are made to the various Army units supplied by this Quartermaster depot. This room has the same door arrangement as the receiving room. It is cooled by blower-type evaporating units at each end.

The butter and egg room, the fruit and vegetable room, and meat room have one each of these blower coils.

The cold room has two evaporating units at opposite sides. The two evaporators are powered by two Vilter 3-cylinder, 10-hp. compressors. Condensers are of the evaporative type.

The other seven evaporators for the warm room are powered by two Vilter, 3-cylinder, 20 hp. compressors. These are also of the evaporative type. Each evaporative condenser has its own receiver which empties

into a large main receiver, and both systems are fed from it. The plant is powered by four machines, two in each series.

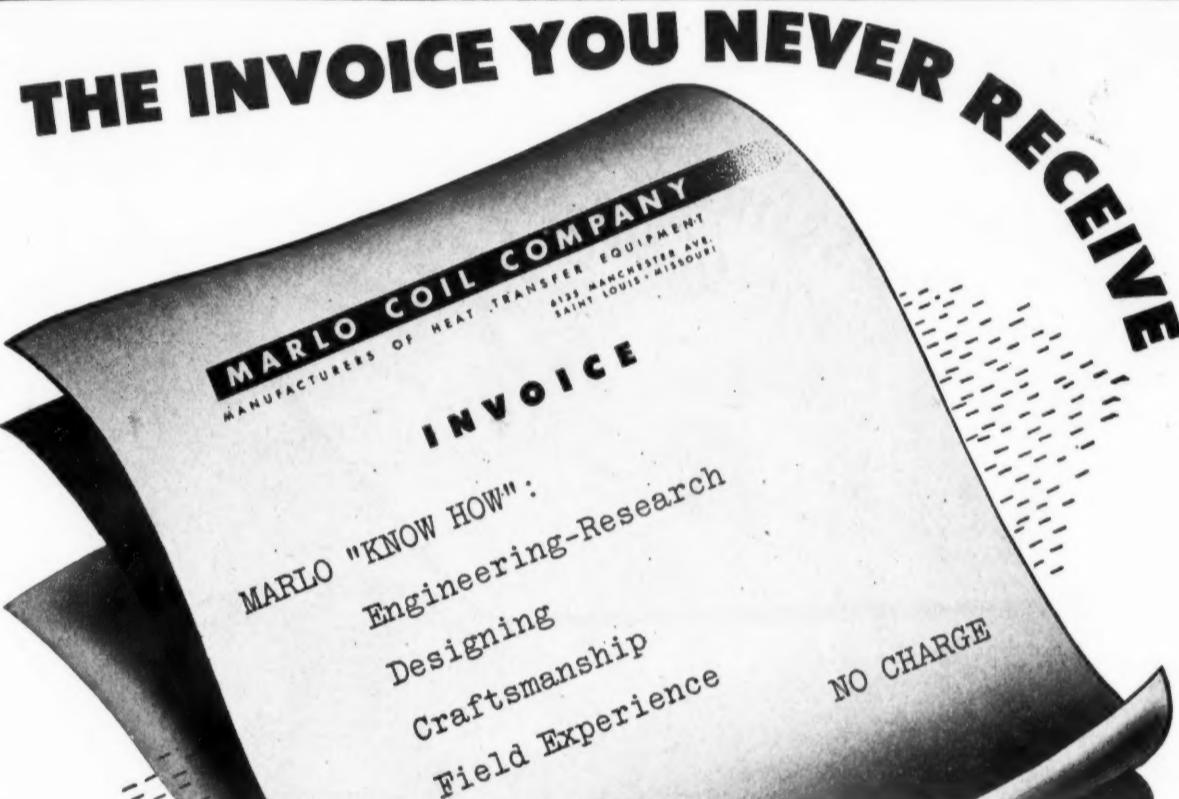
Control panels for each bank have high and low pressure switches for each unit, alarm bell for high pressure, and sequence change-over switches. In this way, either one of the two machines can be cut in first, and upon pressure increasing, the second unit can be utilized. Both banks are equipped with oil separators, and the entire installation is very flexible. Valves are so arranged that any one of the four machines may be cut out if repair is needed.

FREON-12 USED THROUGHOUT

The refrigerant is "Freon-12," taking about 425 pounds for both banks. All produce rooms are equipped with thermostatic control. The evaporative condensers have automatic controls for cutting in water and air if needed. Also, opening and closing dampers to either blow air to the outside or recirculate it according to weather conditions. An air compressor is attached to the water defrost lines to blow the water out of the lines after defrosting.

Perishable products come in to the warehouse from refrigerator railroad cars. When supplies are drawn, the produce goes out by refrigerated trucks to different points along the highway.

Major Mark H. Johnson is the commanding officer.



When you are billed for Marlo Heat Transfer Coils, you pay largely for material, labor and overhead. The intangibles that make the coils perform right are never invoiced: Marlo "Know How", Engineering-Research, Testing, Experience, and all the other ingredients that go into every piece of work and are the most valuable part of Marlo Coils.

We have solved many tough problems which wartime conditions have presented. Why not benefit from our thorough heat transfer knowledge?

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Brazil Food Society Honors Dr. Tressler

BRIDGEPORT, Conn.—Dr. Donald K. Tressler, manager of the General Electric Consumers Institute, has been named an honorary member of the Food and Nutrition Society of Brazil (Sociedade Brasileira de Alimentacao).

Prof. Josue de Castro, president of the society, announced the honor has been bestowed upon Dr. Tressler for his "valuable contributions to the science of nutrition."

Dr. Tressler is well acquainted with the food and nutrition problems of Brazil, having served as a special representative of the U. S. Department of Commerce at the Brazilian Centennial Exposition which was held in Rio de Janeiro in 1922 and 1923.

At the present time he is directing frozen food research for the General Electric Co.

Penn Switch Appoints Buchen as Agency

GOSHEN, Ind.—The Buchen Co. of Chicago has been appointed advertising agency for the Penn Electric Switch Co., manufacturer of automatic controls for the refrigeration and other fields.

In announcing the appointment John R. Netedu, advertising manager, declared that—

"We are of course engaged at the present time in planning our products and marketing strategy for the time when we can again return to civilian markets. We will bring to our old markets improved automatic control devices which will embody the knowledge gained from our research and experience in manufacturing controls for the armed forces.

"In addition, it is planned to manufacture and market some entirely new products to fill important needs in fields in which we have never been active heretofore."

Although it is quite true that there is a definite and fixed relationship between the pressure and the temperatures of the refrigerant at the boiling or condensing points, it does not follow that a serviceman can look at his suction pressure gauge and

Army Refrigeration Problems

By P. B. Reed

Manager, Refrigeration and Air Conditioning Division, Perfex Corp.

Relationship Between Refrigerant Pressures & Air Temperatures

predict what the air temperature within the refrigerator will be, nor can he determine from the room temperature just what the discharge pressure of an air-cooled unit will be.

Let us take, for example, a reach-in refrigerator with a blower type evaporator and an air-cooled condensing unit, charged with methyl chloride, operating in, we will assume, a 90° F. room temperature. The pressure control is set to cut in at 26 psi and cut out at 12 psi.

The expansion valve does not start to feed fully nor effectively until the suction pressure drops to about 16 psi, so that the average suction pressure is 14 psi which corresponds to just under 20° F.

We find that the average temperature of the refrigerator during the running cycle is 40° F., so that there is an average temperature difference of 20°. The air in immediate contact with the evaporator coil becomes very close to, if not actually at the temperature of the evaporator, which, at the beginning of the running cycle may be about 33° or 34° F. and at the end of the running cycle about 16° F.

Air that is cooled by the evaporator is moved along by the fan and mixed with the warmer air in the refrigerator. As it diffuses into the warmer air the temperature of the air is gradually lowered, although the farther away from the evaporator the air moves, the less effect the chilled air has.

The larger the evaporator the greater will be the quantity of air that will be chilled and that will be mixed in with the warm refrigerator air. Likewise the faster the rate of air movement over the evaporator the greater is the amount of cold air mixed with the warm air and the faster is the rate at which the average temperature of the refrigerator is lowered. There is a limit to this, of course, for the air can be moved over the evaporator so fast that there is not sufficient time for it to be very greatly cooled.

If the evaporator were smaller or less air circulated over it, we would have to set the pressure control to cut out lower than 12 psi so as to run the evaporator at a lower average suction pressure and consequently a lower temperature in order to still obtain an average 40° refrigerator air.

EVAPORATOR AREA, TEMPERATURE, AND RATE OF AIR FLOW

On these three factors depend the rate and degree to which the air in the refrigerator is cooled. If the evaporator is large (in effective area) and/or if there is ample movement of air over it, it may be operated at a relatively high temperature, that is, the temperature difference between it and the refrigerator air may be small—as low as 8 or 10° F. which is considered as a comparatively low "TD."

If, on the other hand the evaporator is small and/or if there is not much air movement over it, it will have to be operated quite cold, that is, at a high temperature difference between it and the refrigerator air—as much perhaps as 25 to 30° F.

LOW VS. HIGH TD

Using a blower type coil in this type refrigerator, the 40° F. average refrigerator temperature may be obtained by a large, relatively high temperature evaporator with a low rate of air circulation, or it may be obtained by a small, cold evaporator

with a high c.f.m. fan.

The conditions favoring food preservation will be better in the first case than in the second case for it is desirable to maintain a high humidity and a low rate of air movement over the room. The evaporator may average from 25 to 30° F. and the relative humidity from 85% to 90% or above.

In the latter case the evaporator average temperature may be as low as 10 to 15° a low relative humidity as low as 50% to 60%, which, with the high rate of air circulation, would have a very undesirable drying effect on the food, resulting in considerable loss in weight of the food as well as an objectionable darkening and shriveling in its appearance.

In this connection it must be noted also that the cost of operation is high with the small, cold evaporator operating at perhaps an average suction pressure of 9 or 10 psi in comparison to the larger, warmer evaporator operating at an average suction pressure of around 15 to 18 psi, for the condensing unit has about 35% more capacity at the higher suction pressures (since the capacity of a condensing unit increases along with the suction pressure) and consequently the condensing unit does not have to run as great a percentage of (Concluded on Page 21, Column 1)



VISIBLEAK keeps a ceaseless vigil for those hard-to-find leaks which have always been the Refrigeration Engineer's headache.

VISIBLEAK is a finely-treated colored refrigerant oil which penetrates every nook and cranny of the system. The leak is indicated by a red stain—just like the discoloration on a carburetor in which ethyl gasoline has been used. Can be used safely and effectively with any type of refrigerant.

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4 ounce bottle	\$1.00	48 bottles	
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1 pint bottle	3.00	24 bottles	
1 quart bottle	5.00	12 bottles	
1 gallon can	16.00	6 cans	

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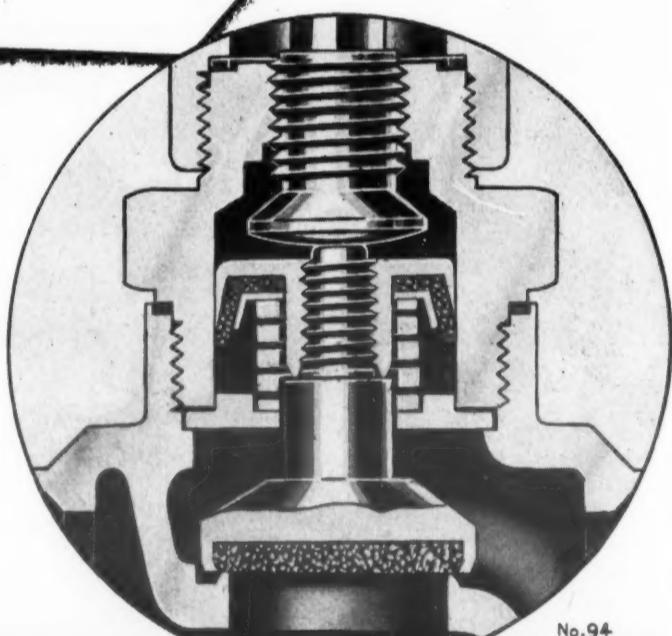


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- 4 Wrench flats for easy removal of internal assembly.
- 5 Spring assures positive opening under pressure.
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ELECTRIC MOTORS FOR INDUSTRY SINCE 1915

HOWELL ELECTRIC MOTORS COMPANY · HOWELL, MICH. · REPRESENTATIVES IN ALL PRINCIPAL CITIES

Air Temperature's Effect on Pressure

(Concluded from Page 20, Column 5) the time to produce the same amount of refrigeration at 18 psi as at 10 psi.

AIR COOLED CONDENSER SIMILAR

A similar condition holds true for the air-cooled condenser. It has a definite amount of heat to transfer to the room air, just as the evaporator has a definite amount of heat to absorb from the refrigerator air. Like the evaporator, the ability of the condenser to do its job depends on its size (expressed in effective area rather than in dimensions of length, breadth, and thickness), its temperature and the rate that air passes over it.

The smaller the condenser the more air that must be passed over it or the hotter it must become in order to get rid of its heat. So the condenser gets hotter and hotter until it finally gets hot enough that the temperature difference between it and the air is enough to allow it to dissipate the amount of heat imparted to it by the hot discharge gas (and this heat comes to it from the refrigerator air and from the motor) in spite of its small surface and the small amount of air over it.

A well designed, clean, air-cooled condenser of ample size with plenty of well distributed air over it may operate with a temperature difference between it and room air as small as 10° to 15°, while a small dirty one with inadequate air movement through it may have to operate at as high as 25 to 30° F. temperature difference between it and the room air. So in a 90° room the discharge pressures might run as low as 100 psi to as high as 130 psi.

Even higher discharge pressures could be expected if there were any recirculation of the condenser air or if the condenser were being overloaded, that is, if it were being forced to dissipate more heat than it was designed to dissipate. This would not be too uncommon a condition for at low suction pressures (and low condensing unit capacities) the amount of heat to be dissipated by the condenser is low, while the same condenser on the same unit might be called upon to dissipate twice as much heat at the higher suction pressures.

Condensing unit manufacturers use a condenser of a capacity sufficient to maintain a low enough head pressure to enable the unit to develop a certain rated capacity under specified conditions, but under such conditions as overload, excessive suction temperatures and pressures, excessive room temperatures or faulty air circulation, discharge pressures above normal may be expected.

20° TD PRACTICAL

Acceptable discharge pressures for an air-cooled may be considered as those corresponding to a saturation temperature 20° above room temperature; thus in a 90° room the head pressure for an air-cooled condensing unit employing methyl chloride would be considered acceptable in field practice at 120 psi (which corresponds to 110°) and for "Freon-12" about 135 psi.

FACTORS AFFECTING DISCHARGE PRESSURES

If discharge pressures of an air-cooled unit are above what they should be for an air-cooled unit at the room temperature in which they are operating, the following points should be checked:

1. Too much refrigerant in the system. This may cause liquid refrigerant to fill some of the lower tubes of the condenser, having the same effect as reducing the area of the condenser.

2. A dirty condenser. Dust or lint not only insulate the surface of the condenser and prevent proper heat transfer, but also clog the passages.

3. A stoppage of some sort within the condenser tubes themselves or in the outlet fittings.

4. Recirculation of air through the condenser; caused by obstructions to the airflow that hold back the flow or deflect the air back to a place where it will again be picked up by the fan and recirculated.

5. Too small a fan, fan running in the wrong direction or too slowly or the fan blades at too flat an angle and not passing enough air.

6. Condenser placed near a stove or other source of heat that radiates heat to the condenser.

7. Air in the system. Air does not condense at the pressures employed in "low-pressure" systems—so it takes up space and surface in the condenser needed by the refrigerant and adds its pressure to that of the refrigerant.

CHECK FOR AIR IN SYSTEM

If air is suspected of being present in the system, it can be accurately determined by letting the unit stand idle until the condenser comes to room temperature (this may be checked by attaching a thermometer to the condenser tubes with putty—be sure that the thermometer is in good contact with the tube. At this time read the head pressure and then compare this head pressure to the saturation pressure in the Temperature-Pressure table for that refrigerant.

If there is no air in the system they should be the same. If the gauge reads higher than it should for that temperature the difference represents the presence of air in the system. For example: If the thermometer reads 90° and the discharge pressure reads 95 psi (methyl chloride) it indicates that there is an excess of 9 psi over the saturation pressure of about 86 psi.

Ordinarily the air may be purged out through the Discharge Shut-off Valve although it is advisable to also purge off the top of the Receiver. Purging should be done after the unit has been idle for a time in order to avoid undue loss of refrigerant.

Excessive discharge pressures are objectionable in that they cause loss of capacity of the condensing unit and therefore increased running time in order to carry the load, excessive heating of the unit and additional current consumption.

New System Installed For Calif. Packing Co.

VERNON, Calif.—A new refrigeration system is being installed in the plant of the State Packing Co. at 3163 East Vernon Ave., Vernon, Calif., by the Pacific Refrigeration Co., Los Angeles.

The Service Man's Ally against Moisture

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ICE-X

ICE-X quickly cures emergency freeze ups when ice forms at the expansion valve or capillary tube. Harmless to use. Great for Freon, Carrene, or Methyl Chloride systems...The dependable liquid anti-freeze.

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7,000 Study In Frigidaire's Repairmen Training Program

2,000 Men Enrolled

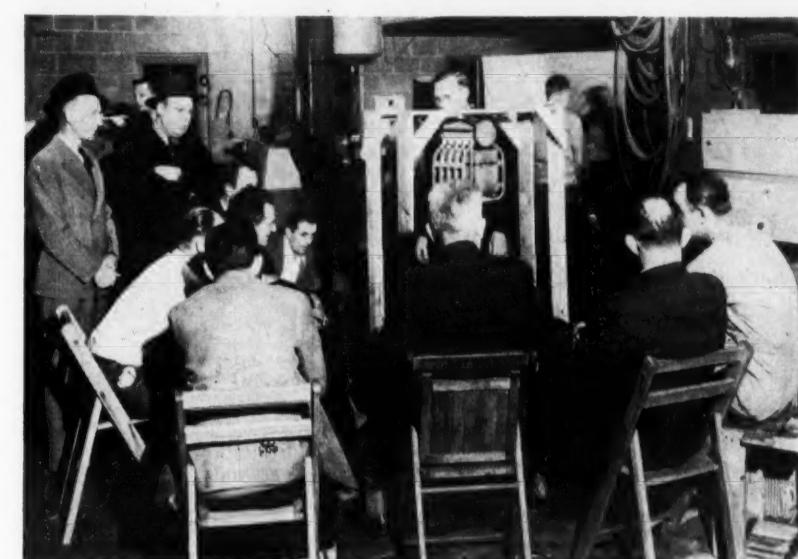
In 75 Service Schools

DAYTON, Ohio—Marked by the training of 2,000 men at 75 District Schools, plus an enrollment of some 5,000 dealers and servicemen in Primary and Post-Graduate Correspondence Courses, Frigidaire 1943-1944 Fall and Winter Wartime Service Training Program has more than demonstrated its worth in the opinion of P. V. Sprout, Frigidaire's service manager.

Tracing the steps which lead to the results reported, Mr. Sprout points out that in order to make certain that the fine record achieved during 1942 and 1943 would be continued, the Frigidaire Division of General Motors Corp. took steps to intensify and expand its service training operations to meet the ever increasing demand for qualified servicemen and to supply the need for essential repair and maintenance service.

"The problem we faced was all the more difficult in view of the diminishing manpower supply," says Mr. Sprout, "and the fact that the millions of Frigidaire installations in daily use were all a year older."

"During the recent training season alone, approximately 2,000 men will have attended 75 district schools." Duration of these schools varied from a few days up to one month and they offered highly organized instruction in fundamental and advanced classes



Here are some of the more than 2,000 men who enrolled in 75 district schools established by Frigidaire Division, General Motors Corp., to learn the theory and technique of repairing refrigerators. Some 5,000 other service men and dealers enrolled in refrigeration correspondence courses conducted by Frigidaire.

Peirce Phelps Named Admiral Distributor

PHILADELPHIA—Peirce Phelps, Inc., has been appointed distributor for Admiral Corp. products.

Postwar, this company will distribute Admiral radios, refrigerators, home freezers, and electric ranges for Philadelphia as well as the Harrisburg, Pa., trading area.

GARDEN-FRESH FLAVOR... CAPTURED AND HELD FOR POST-WAR TABLES

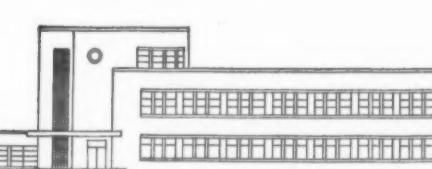


The vital role of Refrigeration in our war-time drama is a curtain-raiser for the vastly expanded part which controlled cold will play in the post-war world. Far wider enjoyment of frozen foods, with a much greater variety and selection of such foods, will be one of many important results of this expansion.

New and improved refrigerating equipment to freeze, warehouse and transport foods...to enable retail display and storage in the home...waits only for the release of manpower and materials. For such equipment Penn will supply controls to establish and hold the temperatures required.

Embodied in these controls will be the efficiency and dependability for which Penn has long held an outstanding reputation in the field of commercial refrigeration. To the makers of refrigeration equipment, and to all manufacturers whose present or post-war product needs automatic control, Penn offers thoroughly experienced engineering, and precision production facilities. Inquiry involves no obligation; write us now. *Penn Electric Switch Co., Gosben, Indiana.*

PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

Periodic Checkup of Air Conditioning Motor Controls Will Cut Service Calls

Editor's Note: This is the second of a series of two articles describing proper maintenance methods for the electrical controls of an air conditioning or commercial refrigeration system. Periodic inspections, say the authors, will prevent many failures, and here they tell what to look for.

By E. E. Lacy, Machinery Electrification Section, and L. E. Markle, Motor Control Engineer, Westinghouse Electric & Mfg. Co.

CONTACT PRESSURE DETERMINES CURRENT CARRYING CHARACTERISTICS

The closed pressure of contacts is an important factor in their ability to carry current. A small contact with suitable contact pressure will carry more current than a larger one with little or no pressure. Renewal of thin contacts is required, as with wear they lose their contact pressure. It is important to keep the contact springs in good condition. Replace them if they have been damaged or have lost temper through exposure to high arcing temperatures.

A monthly inspection of contacts for pressure, available life, surface condition, temperature, and tightness should suffice for normal conditions. For severe operating conditions a weekly inspection may be advisable to prevent any shut-down of the air conditioning equipment.

RENEW FRAYED SHUNTS

Shunts are generally flexible bands

of woven copper strands that carry current from the movable contacts to a stationary stud. If the shunt is unduly bent its strands break and cause additional loading of the remaining strands.

Shunts with broken strands should be renewed to prevent overheating. The terminal connections of the shunt should be tight. Shunt ends are frequently silver plated or covered with special finishes to insure a clean contact surface of good current carrying ability.

COILS SHOULD OPERATE AT RATED VOLTAGE

After coils are wound they are treated with insulating varnish to improve their dielectric strength and make them a solid mass. This makes the coil less susceptible to mechanical injury, eliminates air pockets within the winding and enables the coil to radiate heat more readily than an untreated coil.

Alternating-current coils are designed to withstand 10% over-volt-

age and operate the devices at 85% of normal voltage. Direct-current coils will withstand 10% over-voltage and operate devices at 80% of normal voltage.

Over-voltage operates a contactor or relay with more mechanical force and tends to shorten the mechanical life if allowed to prevail. Overvoltages also shortens the life of a coil because it operates at a higher temperature. Low voltage will cause sluggish action. The contact tips may touch but may not be forced completely closed against the contact spring pressure. Under such conditions the contact tips will most certainly overheat and probably "weld" together. Contacts must always seal closed.

On AC service, the coil current is much higher while the contactor is closing than after it is closed. AC coils are not designed to stand the open-gap or closing current continuously. If any mechanical interference prevents complete closure of the magnetic air-gap of an AC device, its coil will soon be overheated.

Open-circuited coils are easily detected because they cannot operate the device. A voltmeter connected across the coil terminal would show zero voltage. A coil with some turns short circuited might operate, but it would soon overheat and burn out. Most designs permit quick and simple replacement of a defective

Check Contact Pressures



Fig. 4—Contact pressures are very important and should be checked. Weak springs and overworn thin contacts will reduce contact.

Replace Broken Shunts

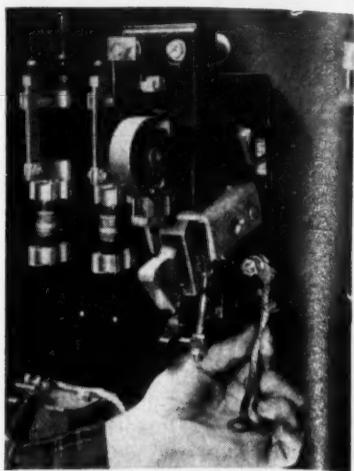


Fig. 5—Broken strands of shunts cause the remaining strands to carry more current and overheat. Replace damaged shunts.

coil and the cost is minutely small compared to the cost of the installed heating, ventilating, as air conditioning equipment.

DEAD CENTER OPENING REDUCES MECHANICAL VIBRATIONS

When a magnetic contactor opens, the movable part strikes the stationary stop rather forcibly. There is a "dead," or center of percussion point at which the effect of the blow is nullified. If the striking occurs at some other point the device is subjected to mechanical vibrations and strains that reduce its mechanical life. This feature is vividly illustrated by the "sting" of a baseball bat if the ball strikes near the end.

DIRT OR RUST MAY BE CAUSE OF EXCESSIVE NOISE

DC contactors always operate quietly when closed. AC contactors may be noisy.

The laminated magnetic structure, necessary on AC designs, must be held tightly together by screws, rivets, or other means. If the laminations become loose the assembly will be noisy.

Noise which is very undesirable in air conditioning equipment will also result if the movable and stationary pole pieces do not fit well together when the device is closed. Dirt or rust may prevent proper closure of these surfaces and cause objectionable noise which may be caused throughout the building.

To prevent rust on these fitted surfaces during shipment some grease is applied. The excess grease should be removed when placed in service to eliminate a "sticking" or sealing effect when the surfaces are first closed against each other.

The most important device in reducing noise of an AC device is the

shading coil usually imbedded in a part of the laminated magnetic structure. This coil is often a single turn of wire or strap and if broken the noise will be most objectionable. If contactor is noisy, look first for a broken shading coil.

OIL IMMERSED AND EXPLOSION TESTED CONTROL USED FOR SEVERE SERVICE

For high-voltage installations in explosive atmospheres and areas of corrosive nature, such as acid fumes, the entire equipment is often completely immersed in oil. The oil should be maintained at proper level and should be kept clean, especially when used for insulating purposes. A monthly inspection of oil immersed equipment is adequate unless service

(Concluded on Page 23, Column 1)

Installing New Coil



Fig. 6—Defective coils must be replaced. Designs are usually made so that coils may be changed easily and without much delay.



Vividly picturing the human need for water, this prize-winning photo was taken by Frank Noel as he drifted in a life boat toward Sumatra following a ship torpedoing.

Oasis! A picture of efficiency . . . in providing refreshing, sanitary, healthfully cooled water in the most easily "drinkable" manner, the OASIS Electric Water Cooler is backed by Ebc's years of pioneering and leadership in the water cooler field!

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Precision . . . in Copper Bends

MUELLER BRASS CO.
PORT HURON, MICHIGAN

We make:
Standard Tubular Fittings
(complete and semi-finished)
Single Pipe and Double Pipe Copper Cells
Special Tubular Assemblies
Filters • Driers
Heat Exchangers

The large U-shaped bend illustrated above is a heat exchanger unit used in Army portable walk-in refrigerators with our armed forces overseas.

We manufacture copper pipe coils in a multitude of shapes and sizes. Smooth, round bends and exact dimensions are characteristic of Mueller Brass Co. coils. Copper tubing is manufactured in our own mills—exactly the right grade as specified for the particular part. We specialize in tubular assemblies, wrought copper solder type fittings and return bends. Our equipment is the most modern procurable and adapted to low cost, high quality products. All tools for fabricating, forming and processing are made in our own Tool Making Department—the best possible tools for the job are thus obtained with the least possible delay. Write us if you have requirements for specially fabricated copper tube. Our engineers will be glad to help solve the problem.

**VALVES • FITTINGS
ACCESSORIES FOR
REFRIGERATION AND
AIR CONDITIONING**

Fig.

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RELAY

Are Shields Important

Fig. 7—Arc shields must be in correct position to avoid decreasing the arc-interrupting ability of the entire blowout structure and interference with operation of the contactor.

Check Oil In Dashpots

Fig. 8—Since the working parts of dashpots are machined to small clearances they must be kept clean. Correct liquid should be used and liquid level should be maintained.

Motor Starters Must Be Kept Free of Oil, Dirt, Moisture for Efficiency

(Concluded from Page 22, Column 5) is so severe that the oil deteriorates rapidly.

"Explosion Tested" starters are intended for use in explosive atmosphere and do not require oil. These starters are built to specifications of the Underwriters' Laboratories. The enclosing cases are built to withstand high pressures that occur within the case if internal explosions should occur and to prevent flames escaping into the explosive atmosphere. If dismantled, the parts of an Explosion Tested starter must be carefully assembled to be sure that all bolts, nuts, and joints are tight. Operation in the explosion area, unless properly and completely assembled, is not permitted.

Since many parts of contactors and relays are made of steel and subject to rust, these parts are always covered with a protective coating such as zinc or cadmium plating. Copper and brass parts are often treated with a light finish to protect against oxidation and for sake of appearance. Steel cabinets are painted; small sizes often have baked finishes. Galvanized sheet is often used to give added assurance against corrosion.

RELAY OPERATION DEPENDENT ON PROPER LIQUID IN DASHPOT

When oil or any liquid is used in

dashpots, regular inspections should be made to be sure that the dashpots are free of friction and the proper oil level is maintained. The liquids used in dashpots are tested for certain characteristics such as change in viscosity with temperature changes. A change in oil or liquid would therefore affect the operation of the relay. No substitution of oil or liquid used in dashpots should be made.

Thermal relays are subject to ambient temperatures and should be in a room temperature equivalent to that in which the motor is located. Otherwise the relays may not operate to the best advantage. For example, a thermal overload relay should not be in a temperature much in excess of the motor room temperature unless proper allowance for the difference in temperature is made when the thermal heaters are selected.

CONNECTIONS MUST BE TIGHT AND CLEAN

Loose connections are a frequent cause of trouble. They result in overheated parts that eventually must be replaced. Once tight does not mean they will remain tight. Periodic inspection is necessary. Changes in temperature, vibration, and carelessness are all common

causes of poor connections. They should always be tight and clean.

Resistors frequently fail from excessive temperatures. Overheating may be caused by insufficient ventilation, excessive current, or more continuous service than was anticipated in the design. Loose connections often cause local heating with eventual burned connectors. Grid or cast typed sometimes break in handling or with frequent and sudden overheating and cooling.

KEEP STARTERS CLEAN AND DRY

Moisture, dirt and dust are constant sources of trouble as they reduce insulation values of insulated wires and cables. They constitute a leakage path across which breakdowns occur between points of different potentials that would never occur on clean and dry surfaces.

Routine maintenance should remove dirt and dust by blowing with dry compressed air, wiping or washing with suitable cleansing fluid. Compressed air under too much pressure may drive metallic dust and dirt into insulation or lodge particles between stators and rotors of motors or in moving parts of contactors and relays.

Moisture may occur from condensation, humid atmospheres, spray or overhead dripping. Heaters are sometimes placed in enclosures to keep the interiors dry. They are generally arranged to be automatically effective when the equipment is idle because the normal heat of resistors and coils is sufficient while in operation. Drip-proof, water-tight, and dust-tight enclosures may be provided.

Moisture in conduits is a frequent

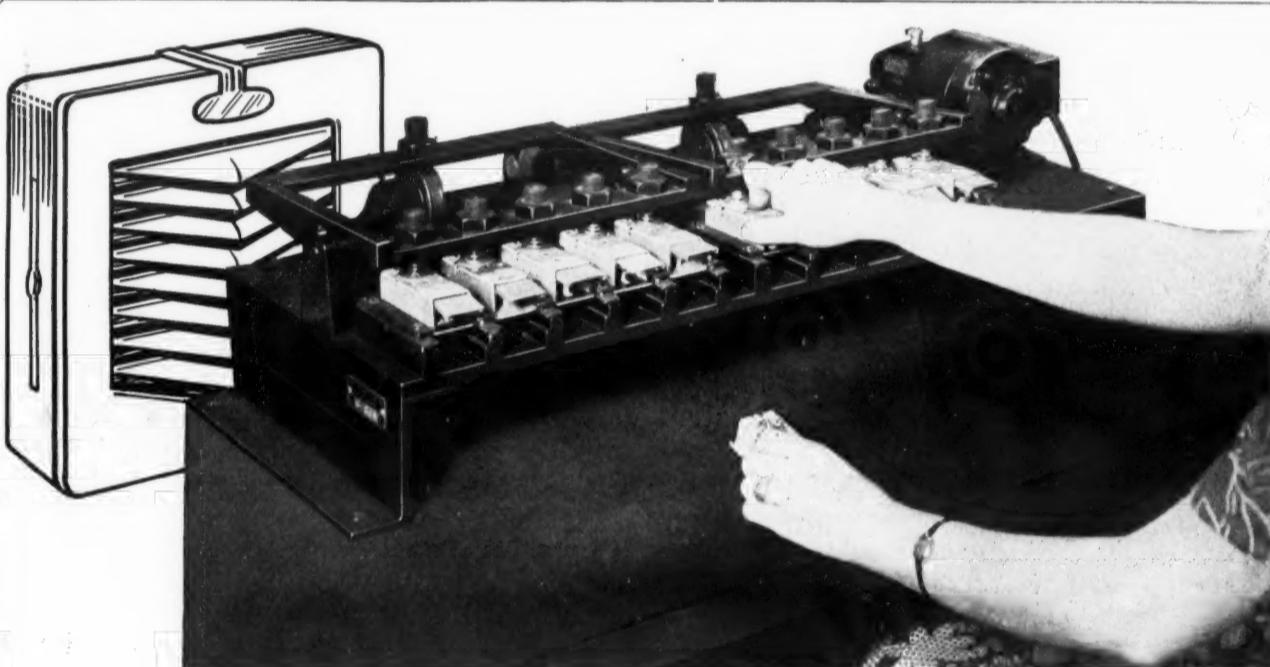
Connections Require Periodic Inspections

Fig. 9—All connections must be kept tight at all times. Loose connections are a frequent but very elusive cause of operating troubles.

tight. Defective wiring is an outstanding cause of electrical trouble and fires. Regular inspection is necessary.

High temperature is a sure sign of trouble. However, one must be sure that the temperature is excessive. To touch a cabinet or coil or motor and decide it is too hot is not a safe procedure because safe operating temperatures are often higher than one can comfortably "feel" with the hand. The best procedure is to know what temperature is considered safe and then actually measure it.

Here are the high points that should be checked to keep motor starters in good operating condition. They must be free of oil, dirt, and moisture. No oil should be used on contacts or bearings of contactors and relays. Connections should be tight and wiring should be safe.

**"RUN IN" LIKE A QUALITY MOTOR CAR . . .****8 EXCLUSIVE FEATURES OF WHITE-RODGERS HYDRAULIC-ACTION TEMPERATURE CONTROLS**

1. May be mounted at any angle or position, above, below or on level with control point.
2. Hydraulic-Action Principle incorporating solid-liquid filled bulb and capillary provides expansion force comparable to that of a metal bar.
3. Diaphragm motion uniform per degree of temperature change.
4. Power of solid-liquid charge permits unusually sturdy switch construction resulting in positive contact closure.
5. Heavier, longer-wearing parts are possible because of unlimited power.
6. Dials are evenly and accurately calibrated over their entire range because of straight-line expansion.
7. Controls with remote bulb and capillary are not sensitive to change in room temperature. Accuracy of control is not affected by temperature changes in surrounding area.
8. Not affected by atmospheric pressure. Works accurately at sea level or in the stratosphere without compensation or adjustment.

to assure accurate performance the moment it is installed

Hour after hour this specially designed cycling machine breaks in White-Rodgers control-switch mechanisms. Each is operated for not less than five hundred cycles to assure smooth, uniform contact action.

Just another reason why White-Rodgers Controls are accurate when you install them—need no recalibration due to flexing of moving parts or seating of bearing surfaces.

Specify White-Rodgers to assure dependability and freedom from trouble.



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Controls for Refrigeration • Heating • Air-Conditioning

Artic
(DU PONT METHYL CHLORIDE)

DU PONT

SERVICE NEWS

WAR-TIME NEWS LETTER

Dear Sir:

When necessary to convert "Freon" units to Methyl Chloride, take every precaution to do it safely. Follow closely the ASA Refrigeration Code to avoid dangerous practices.

Concentrations of 8 to 17% of Methyl Chloride vapors mixed with air ... are flammable. Vapor concentrations of 2-1/2% or more Methyl Chloride ... are toxic.

Average household unit, however, contains less than 3 lbs. of refrigerant ... so there is little practical hazard from leaks ... unless discharge is confined entirely in a small room which has no ventilation ... or no change of air during leakage.

Don't use Methyl Chloride with aluminum, zinc, magnesium and its alloys, die castings ... as these materials may be attacked when only small amounts of water are present.

Prevent trouble from moisture ... by doing everything you can to keep moisture out of the system ... by removing any water which may be present ... by using a dry Methyl Chloride.

DuPont Methyl Chloride ("Artic"), as shipped, has less than 0.008% moisture ... not enough to be harmful ... but it can pick up water during transport to smaller cylinders or in charging. Use only dry lubricating oils ... keep them in tight containers out of contact with air.

More about "moisture effects" ... and other helpful information in our 92-page book "DuPont Methyl Chloride." We'll be glad to send you a copy.

Very truly yours,
Thomas Coyle
Manager, Chlorine Products Division

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Servicing the G-E Refrigerator Line

Replacement Procedures

Bellows Replacement

CA, SCOTCH-YOKE, AND OPEN-TYPE MACHINES

1. Remove control from machine.
2. Cool end of replacement bellows tube until bellows contracts in shipping clamp.

Easiest method is to hold bellows tube on dry ice. Another way is to use refrigerator evaporator to cool bellows tube. With bellows still in shipping clamp, place it inside refrigerator. End of bellows should be

held or clamped tightly against evaporator near bottom. On many machines, bellows tube clamp installed on side of evaporator can be used. Run machine continuously for 15 or 20 minutes by connecting control leads together. (If control is connected to machine circuit with a locking connector plug, insert bare ends of a looped jumped wire into plug from which control was disconnected.)

3. Lay control on flat working surface with cover upward. Remove screws holding original bellows to control and withdraw bellows.

After screws are loosened and until replacement bellows is tightened in place, control should be kept in same relative position. It must not be tilted because one of the nuts which receive bellows holding screws may slip out of slot inside control.

4. Remove shipping clamp and insert bellows into control while tube is still being cooled. Press bellows into control and install bellows holding screws.

5. Remove end of bellows tube from cooling agent.

DR MACHINES

1. Take off control cover.
2. Remove back panel of A and C controls by taking out screws.
3. Take out control mounting screws.
4. Loosen large nut on bellows.
5. Remove clamp holding bellows

bellows still in shipping clamp.

Improper Cooling

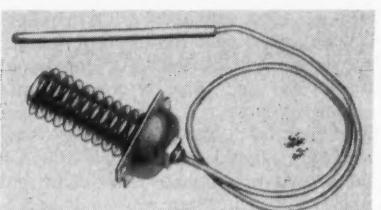


Fig. 34—Bellows not properly cooled.

tube to evaporator and straighten tube.

6. Withdraw inoperative bellows from control and pull tube up through cabinet top.

7. Push replacement bellows tube down through cabinet top with

Editor's Note: This is the tenth in a series of articles on servicing the General Electric Co.'s line of household refrigerators.

Cooled Bellows

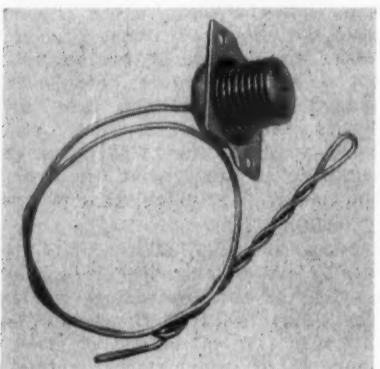


Fig. 33—Bellows cooled properly.

Various Types of G-E Controls

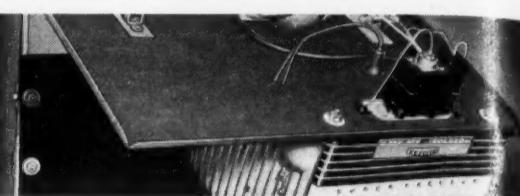
Fig. 35—Standard control used in G-E refrigerators.



Fig. 36—This is the illuminated control featured in 1940 G-E refrigerators.



Fig. 37—Illuminated steady-cold control used in 1941 models.



Control Replacement

CA, SCOTCH-YOKE, AND OPEN-TYPE MACHINES

STANDARD CONTROL

1. Loosen bellows tube clamp on side of evaporator and slide end of tube out from under clamp.

2. Pry out lower edge and remove control escutcheon plate on CA-1B, CA-2B, and CK machines.

3. Remove control mounting screws.

4. Pull out control as far as leads will allow.

a. With CA, CK, CB, CM-1, and CM-2 machines, straighten bellows tube so that it can be pulled up through box top.

b. With CE, CF, CH, CJ, and FBA machines, guide bellows tube through hole in top front corner of evaporator. If bellows tube is twisted and will not slide through hole, loosen or remove escutcheon plate.

5. Disconnect leads from control terminals.

When leads are connected to control with locking connector plug, twist and pull out plug.

6. Install replacement control by reversing previous steps.

1940 ILLUMINATED CONTROL

1. Loosen bellows tube clamp on left side of evaporator and slide end of tube out from under clamp.

2. Pull outer control knob straight

forward and out.

3. Pull out bottom of control escutcheon plate and lift off lugs at top.

4. Remove screws holding control to lamp housing, bring control forward and pull leads through top plate.

5. Disconnect leads from control terminals.

6. Install replacement control by reversing previous steps.

1941 ILLUMINATED STEADY-COLD CONTROL

1. Loosen bellows tube clamp on left side of evaporator above header and slide end of tube out from under clamp.

2. Pull down on rear of lamp housing and then forward to clear dial.

3. Remove dial by pulling downward.

4. Loosen screws holding control mounting plate to cabinet top plate.

5. Slide control mounting plate from under screws, then pull it down and forward.

6. Remove screws holding control to mounting plate.

7. Disconnect leads from control terminals.

8. Install replacement control by reversing previous steps.

Be sure bellows tube is completely under clamp and does not touch evaporator at any other point.

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CAUSE
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Processed Especially for the Dehydration of Refrigerants

Davison's Silica Gel adsorbs . . . in addition to moisture . . . acids and other impurities that might be present in the refrigerant. Davison's Silica Gel prevents breakdowns by eliminating the causes of equipment deterioration.

You will also find that Davison's Silica Gel will not attack metals or alloys, will not cake or powder . . . its capacity is unaffected by oil . . . has maximum capacity for moisture, gives instant action, system functions efficiently immediately. Effective on Freon, Methyl Chloride, Sulphur Dioxide, etc., etc.

Your jobber can furnish Davison's Silica Gel in factory-charged dehydrators or for refilling

THE DAVISON CHEMICAL CORPORATION
Progress through Chemistry
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CANADIAN INDUSTRIES LIMITED, General Chemicals Division

YOU GET **EXTRA VALUE**
IN ANACONDA TUBES
WITH CUP-SEALED ENDS

IF YOU WANT pure copper tubing (99.9% pure), that's uniformly soft, without hard spots, smooth, clean and completely dehydrated, be sure you get Anaconda.

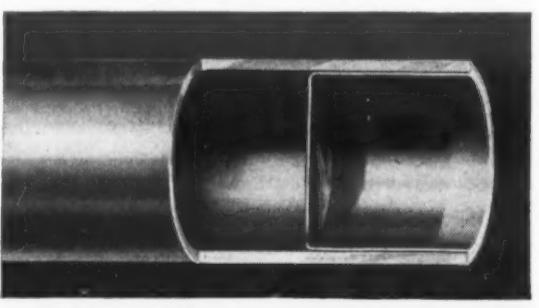
With the exclusive cup-seal*, fins may be crimped on, or the tube may be formed or bent before the sealed ends are cut off, thus avoiding all possibility of moisture or dirt entering tube.

The cup-seal reduces waste, since the depth of the cup is no greater than the diameter of the tube. Soldered in place, the cup-seal cannot be accidentally removed and eliminates

*Patent Applied For

the sharp edges that may mar the coil.

Anaconda Copper Tubes are available in all standard sizes up to and including $\frac{3}{4}$ " O.D. Stocked by jobbers in coils of 25, 50 and 100 feet. Longer lengths on special order.



Anaconda Copper Tubes

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Use Test Data on Plastics Cautiously, For Many Variables Affect Performance

Final Product Is Compromise Between the Designer, Supplier, Molder, ASRE Told

PITTSBURGH, Pa.—Don't depend too much on test data when selecting plastic materials for a product, warned John Sasso, managing editor of *Product Engineering*, when he addressed the 31st spring meeting of the American Society of Refrigerating Engineers held at the William Penn hotel here recently.

Discussing "Industrial Plastics Materials: Characteristics and Factors Affecting Costs," Mr. Sasso reminded ASRE members that the physical properties of most plastic materials are affected by temperature, humidity, manner of molding, and several other factors.

TENSILE STRENGTH IS SUBJECT TO CONSIDERABLE VARIATION

Tensile strength is "one of the properties of a plastic material that is subject to considerable variation depending on manufacture, molding technique, degree of polymerization, amount and kind of fillers and plasticizers present, temperature, and moisture," he declared.

"To put it crudely," he added, "if you spit on a piece of plastic tubing, it's changed."

Before a manufacturer makes any commitments for a plastic part in his product, he should consult with persons familiar with the various phases of plastic production, advised

Mr. Sasso. The final design should be a compromise between the ideas of the designer, and those of the firm supplying the plastic material, the mold maker, and the producing end of the business.

Two basic types of plastics, each with varieties, comprise the wide range of materials available for use, pointed out Mr. Sasso. The two basic classes are thermosetting and thermoplastic.

TWO BASIC TYPES OF PLASTIC MATERIALS DESCRIBED

"Thermosetting plastics change chemical state under the application of heat and pressure, becoming hard and infusible. Such plastics cannot be resoftened. Thermoplastic materials soften under the application of heat and harden when cooled. They may be resoftened and remolded many times," said Mr. Sasso.

Among the thermosetting compounds are: phenol formaldehyde, phenol furfural, urea formaldehyde, melamine formaldehyde, allyl alcohol resins. Thermoplastic compounds include: cellulose acetate, cellulose acetate butyrate, ethyl cellulose, vinyl compounds, acrylics.

Some special types of thermosetting phenolic plastics, particularly "low friction molding" materials, are extensively used in refrigerator and automotive door ferrules, and bearings.

SEES BIG USE FOR POLYSTYRENE IN REFRIGERATORS

One thermoplastic material expected to be used extensively in the refrigerator field is polystyrene, a vinyl compound.

"Polystyrene," explained Mr. Sasso, "has excellent dielectric properties and optical clarity and extremely low water absorption. The material shows increase in strength as temperature decreases and has excellent chemical resistance. Colors are clear transparent to all shades."

Just before the war polystyrene was being applied to refrigeration uses, and further use of this particular plastic may be expected after the war, said Mr. Sasso.

COST ESTIMATING DIFFICULT

When it comes to estimating costs of molded plastics parts, the problem is not easy to solve, since, pointed out Mr. Sasso, "the final cost, as with any engineering construction material, depends on a number of factors. The comparative cost per pound is not at all trustworthy, since specific gravity, part design, and fabrication method may influence cost adversely.

"Generally speaking, cost of molded parts depends on material cost, mold cost, labor cost for molding, finishing cost plus usual overhead, maintenance, and similar fixed charges. . . . Every design has its own peculiarities affecting cost," said Mr. Sasso.

Certain design methods may be used to reduce cost, as will special equipment if available, he declared. While extra cavities in the mold will increase the mold cost and the mold open time, they will reduce unit cost.

COMPLICATED MOLDS COST MORE

According to Mr. Sasso, undercuts and side cores multiply the number of pieces in the mold, and inserts increase mold open time. In addition the mold will require insert holding

pins and plates and increased maintenance.

Increasing the size of the mold also increases its cost, and requires longer time in heat treat and greater care to keep distortion of the steel mold to a minimum.

"Close dimensional accuracy can

be maintained in machining the mold to specified dimensions, but in connection with material shrinkage, it becomes costly," stated Mr. Sasso. "Variations in material and atmospheric conditions may also affect final dimensions."

Commenting on this address, J. W.

Craig of Crosley Corp. pointed out some of the present-day uses of plastics in refrigerators, such as breaker strips and inner door panels, and cautioned against using plastics in high humidities. Plastics tends to absorb moisture and may crack, he said.

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We of The Weatherhead Company are happy to present this bronze plaque to those jobbers who have been identified with the distribution of our products for periods ranging from five to fifteen years. Their loyalty, cooperation and esteem are among our greatest assets. The entire Weatherhead organization joins me in expressing these few words of friendly good wishes to each of you personally.

Sincerely,

W. J. Weatherhead

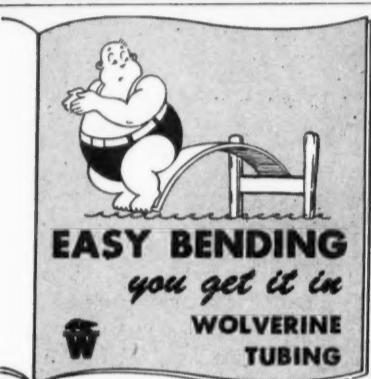
THE WEATHERHEAD COMPANY, CLEVELAND, OHIO

NEW 1944 CATALOG



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Washing Machine Parts Catalog will not be issued in 1944

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See Frozen Food Cheap As Dehydrated Item

AUSTIN, Tex.—Frozen foods could be sold as cheaply as those preserved by dehydration or hot-processed methods if materials were made available for necessary equipment, believes W. R. Woolrich, dean of engineering at Texas University.

"The present state of the art of quick and flash freezing is now advanced to a perfection, that, with the release of equipment priorities, frozen foods could be made available to the purchaser at prices as low as those for hot-processed and dehydrated foods," said Mr. Woolrich in his farewell address as vice president of the American Association for the Advancement of Science.

Mr. Woolrich, who has done extensive research on food preservation with Dr. Luis Bartlett, declared that "with the coordination of our implements of electrical power, transportation, roadways, and mechanical inventions, and with the competent support of food technologists, the bacteriologists, and the chemists, the engineering profession should be able to assure the multitudes that the world's ability to preserve is now prepared to equal the world's capacity to produce food."

Charter Refrigerated Co-op

RICHMOND, Va.—The Virginia State Corporation Commission has issued a charter to Four-Co Refrigeration Co-operative, Inc., Manassas, Va., with a capital of \$10,000. James B. Cross of Clifton, Va. is president.

Farm Journal Comes Out For Freezing In Place of Canning

PHILADELPHIA—Canning time on farms and in city homes may be changed to "freezing time." Preserving kettles, pressure cookers and glass jars may in great degree go into the discard. Such things may come early in the postwar period, an article in the "Farm Journal" indicates.

Writing in the May issue, Ray Anderson, associate editor, foresees these results:

More dollars for many farmers by opening up new markets—they may sell important amounts of frozen produce. Freezing will give them another chance to be processors, and thus tie in with the "Vertical Diversification" idea proposed by D. Howard Doane, St. Louis farm manager.

Changed food habits, better health.

Jobs for returning service men—and for older farm girls—some of these jobs right on the farm.

Temporary headaches for the whole food industry while adjustments are being made.

Lightening of the farm housewife's work. "Freezing takes less than half as much time as canning, and is much less fuss," says Miriam Williams, "Farm Journal's" foods editor. "Modern frozen food containers are so easy to handle, and all the long processing with heat is eliminated. Products can't help tasting fresher, for there is less chance for food to deteriorate or spoil when the time required to get them ready to freeze is so short. And no hot kitchen!" Frozen vegetables and meats cook in a very short time, too, as freezing seems to tenderize.

"Bulk of frozen food sold in grocery stores will likely come from professional food processors, as at present," Anderson believes. "Certain companies are already well-established in the frozen fruit and vegetable market with high-quality products, and doubtless will maintain that position."

"Nevertheless, there are interesting market possibilities for farmers in quick-freeze," he says.

Anderson further says, "Farm women have always found markets for specialties of high quality, 'fresh from the farm.' They have had phenomenal success with community markets. There are now approximately 250 of these women's markets in which 8,000 women sold nearly a million dollars' worth of produce last year, according to the U. S. Department of Agriculture.

"If women can sell fresh and canned stuff there they will sell it frozen, too, just as soon as town and city housewives have sufficient refrigerators with necessary compartments for holding the food at low temperature. Some of it will be sold by delivery to the customers' own homes, and at roadside stands," he asserts.

Mr 'Z' To Promote S. American Freezing

NEW YORK CITY—To survey and promote quick-freezing and dehydration of food products in Brazil, M. T. Zarotschenzoff, inventor of the "Z" process of quick freezing has left for a three-month trip to South America.

As the guest of the Brazilian company, Sociedade Anonima de Congelac, ao Rapida e Deshidratac, ao "Gelrap," he will conduct a number of demonstrations of food freezing and dehydration in connection with lectures.

During a recent meeting of the Eastern Frosted Food Association at the Hotel McAlpin, Mr. Zarotschenzoff outlined his experiments with short-wave electric induction heating of meats to destroy the virus causing foot-and-mouth disease prevalent in South American and European countries.

Two-minute application of this type of heat at 140° F. effectively sterilizes the meat without changing the meat structure, declared Mr. Zarotschenzoff, who is studying the possibilities of using induction heating for other foods as well as meat.

Usual methods of meat sterilization, such as the simple cooking process, require at least 325° F. temperatures for 30 minutes per pound of meat, which also changes the meat structure, he contends.

Dr. Wm. Pennington on Carrier Research Staff

SYRACUSE, N. Y.—Dr. William A. Pennington, associated with the Mellon Institute of Pittsburgh for the past four years, has been appointed to the research staff of Carrier Corp.'s engineering division, announces Vice President Herbert L. Laube, who heads the division.

Dr. Pennington will study metallurgical and chemical problems, including a number of research projects connected with the company's preparation of new and redesigned postwar products, it was announced.

A native of Halls, Tenn., Dr. Pennington took his B.S. in chemistry at Union University, Jackson, Tenn., in 1925, subsequently becoming head of the mathematics department there. Iowa State College granted him a Ph.D. degree in chemistry in 1933, after which he joined the research department of the American Roller Mill Co.

Yuba City Plant Will Freeze Calif. Produce

YUBA CITY, Calif.—The first unit of the projected \$150,000 plant for the quick-freezing of fruits and vegetables is being constructed in Yuba City, Calif., by A. D. Atterbury, fruit and vegetable packer of that city.

This first unit will contain freezing and storage facilities and will cost approximately \$40,000 for building and equipment. It will be completed in time to quick freeze this season's cherry crop, following which peaches will also be quick-frozen for the market.

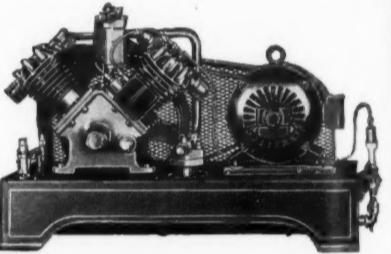
The new plant will provide an important new outlet for the great crops of vegetables and fruits produced in this area of California.

Other units will be added to the plant as soon as the materials required are released by the War Production Board. This probably will be next year, Mr. Atterbury said.

THE SYMBOL OF
Modern
REFRIGERATION
CONTROL

MODERNIZE WITH
POLARTRON CONTROL
FOR "FROST FREE" CONSTANT COLD
MINNEAPOLIS-HONEYWELL REGULATOR CO.

THE DESIGN OF POST-WAR RETAIL MARKETS ...and refrigeration



What will the post-war retail market be like, is your first question. None of us can decide that definitely at this moment. The trend, because of the existing labor situation, has been toward self-service. Perhaps display cases will be of the beauty, utility and comfort that until now have been dreams. Miracles of laboratory science will be used in their production, including such materials as plastics, new metal alloys, plywood and others, in any desired colors.

To meet the refinements of such innovations, refrigeration will probably be a deciding factor of design. It may be that the refrigeration unit of the post-war era will be contained in one sealed unit, without belts, stuffing boxes, shaft seals or moving parts. It may be that each show case and cooler will have its own unit of the correct size to provide adequate refrigeration. It may mean the end of having one or more compressors in the basement and refrigeration lines running through walls and floors. Stores will be air-conditioned, not only to provide increased comfort for customers, but to prevent spoilage of merchandise.

BRUNNER refrigeration and air-conditioning condensing units will play a vital part in the production of the plastics, glass, and other construction materials used in the design of the post-war retail market as well as in the preservation of our food supplies.

Why not consult our engineers—experts in industrial and commercial refrigeration and air-conditioning—on any temperature or humidity problem?

BRUNNER MANUFACTURING COMPANY
UTICA 1, NEW YORK, U. S. A.

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REFRIGERATED SELF-SERVICE
REFRIGERATED SELF-SERVICE

ARMY NAVY
BRUNNER
FOR OVER 35 YEARS
THE SYMBOL OF QUALITY

Air Conditioning Is Vital Element For Famed Laboratory

COLUMBUS, Ohio—Taking its place beside the test-tube as an indispensable working tool in scientific research, temperature and humidity control equipment has won a permanent place at the Battelle Memorial Institute, of this city.

After two years' experience with an air-conditioned laboratory, scientists at Battelle have found that their centralized method for the control of the common variables of temperature and humidity facilitates research investigations.

Battelle engineers described the use of the air conditioning installation as follows:

"The constant temperature and humidity room of Battelle Memorial Institute is located on the third floor of the Institute's main building. A large room, about 40 by 20 feet, it is conditioned by Carrier automatic equipment housed on the floor above. Insulated, and approached by but one set of double doors which form a seal when closed, the room provides a chamber in which a constant temperature and humidity can be maintained the year round.

"Here a temperature of 80° F. and a relative humidity of 50% are maintained continuously with a negligible variation. A recording psychrometer in the room provides a permanent record of the temperature and humidity and assures the research worker that there have been no undesired variations during the time of his experimental work.

"The Battelle constant temperature room is used by all the Institute's various research divisions. At any one time a score or more of research workers may have experiments in progress in the room. These projects may be concerned with anything from studies on the dustproofing of coal or on the measurement of the creep properties of a new alloy to the evaluation of a paper-making process or a treatment for the prevention of fungicidal growth on textiles.

"An example of the use of the room for temperature control is in the study of 'creep' of a low strength metal such as lead. Frequently in a metallurgical investigation it is necessary to know the 'creep' properties of the metal or alloy under ordinary temperatures. 'Creep' is the deformation of a metal under prolonged stress, and it is thus termed because the deformation is extremely slow. It varies with the temperature; hence, to achieve reproducible results, temperature must be controlled. Specimens tested in January must be comparable with specimens tested in July. Comparable data are obtained by running the 'creep' tests in the constant temperature and humidity room.

"How constant humidity enters into Battelle research may be seen from the frequent use of the laboratory in connection with studies on the dustless treatment of coal. The effectiveness of hygroscopic materials, which allay dustiness of coal by extracting moisture from the air, is proportionate to the humidity of the air. Obviously, any measurement of dustiness after a dustless treatment with a hygroscopic material, must be made with the treated coal in equilibrium with a standard humidity to be of any comparative value. The constant temperature and humidity room provides the atmosphere of standard humidity."

FOOD MUST BE CONSERVED

Refrigeration today is performing a vital service by guarding and preserving for future use, priceless food which might otherwise be wasted. Write for literature.

GENERAL REFRIGERATION DIVISION



Foundrymen Have Set of Standards On Ventilation

CHICAGO—Mechanical ventilation for foundries and adjoining offices, lunch and rest rooms is a necessity where adequate air change is not possible through natural means, according to the industrial hygiene codes committee of the American Foundrymen's Association, which has developed a code on ventilation and other sanitation practices.

Section V of the code, which is devoted to ventilation, sets up minimum requirements to be met by natural ventilation, and if that is impossible, suggests installation of mechanical ventilating equipment.

All work rooms in which employees regularly work, other than rooms used primarily for storage and warehouse purposes, shall have not less than 2,000 cu. ft. of air space per person regularly employed, based on gross cubical contents, provided the total projected area of doors and windows opening to the out-of-doors is not less than 12½% of the gross area of the work room; otherwise a system of mechanical air supply shall be provided, states the code.

MINIMUM IS STATED

"Where there is less than 2,000 cu. ft. of air space per person regularly employed in a work room, or where the total projected area of all doors and windows opening to the out-of-doors is less than 12½% of the gross floor area of the work room, there shall be mechanically supplied an amount of clean tempered air on the basis of one of the two following rules, whichever gives the greatest amount of air supply:

"1. For every 100 cu. ft. of air space or fraction thereof, where the air space per person regularly employed in the work room is less than 2,000 cu. ft., there shall be supplied 2 c.f.m. of air per person, or—

"2. When the projected area of all doors and window openings to the out-of-doors is less than 12½% of the gross floor area of the work room, there shall be supplied 2.4 c.f.m. of air per person, for each 1% or fraction thereof, of the projected door and window openings that are less than 12½%."

The code requires no mechanical ventilation for those offices, rest, locker, and lunch rooms whose window and ventilator openings are not less than 5% of the gross floor area. If window openings in these rooms are between 2½% and 5% of gross floor area, mechanical ventilation supplying not less than 0.6 c.f.m. of "tempered" air per sq. ft. of gross floor area is recommended.

WINDOW-TO-FLOOR-AREA

If window openings in these same areas are less than 2½% of gross floor space, the code calls for mechanically supplied 0.6 c.f.m. of "clean tempered air" per sq. ft. of gross floor area plus mechanically exhausted 0.3 c.f.m. of air per sq. ft. of gross floor area.

If offices, rest and lunch rooms are located in the interior of buildings with no direct natural ventilation to the out-of-doors and which have less than 5% and more than 2½% of the gross floor area of the room represented by net window and ventilating openings opening to the building in which they are located, and if the net area of all windows and ventilating opening to the out-of-doors of that floor of the building plus the office, rest, and lunch rooms is not less than 5% of the gross floor area, no mechanical ventilation shall be required.

FOR LUNCH AND REST ROOMS

"However, if the net open area of all windows and ventilating openings to the out-of-doors on the floor of the building containing office, rest, and lunch rooms is less than 5% of the gross floor area of the floor of the building including office, rest, and lunch rooms then there shall be mechanically supplied not less than 1 c.f.m. of clean tempered air per sq. ft. of gross floor area to such office, rest, and lunch rooms, and there shall be mechanically exhausted 1 c.f.m. of air per sq. ft. of gross floor area.

"When a room is used for kitchen purposes only, for the preparation of food for employees, there shall be mechanically exhausted 4 c.f.m. of

air per sq. ft. of gross floor space, and if the net open area of windows and ventilating openings to the out-of-doors is less than 3% of the gross floor area of such kitchen, there shall

also be mechanically supplied 1.2 c.f.m. of clean tempered air per sq. ft. of gross floor area.

"If the amount of net open area of windows and ventilating openings

to the out-of-doors is less than 5% of the gross floor area of toilet and locker rooms, there shall be mechanically exhausted 1.5 c.f.m. of air per sq. ft. of gross floor area."

INCREASE YOUR PRESENT REFRIGERATION CAPACITY WITHOUT ADDING COMPRESSORS



PATENTED

● The NIAGARA "No-Frost" Method eliminates the progressive icing of refrigeration coils with the attendant loss of refrigeration. It enables you to refrigerate additional space without adding to compressor load—or to save power in present operation.

In addition, the Niagara DUO-PASS AERO CONDENSER increases refrigeration capacity by reducing head pressures. This has been proved by users' power costs reduced as much as 35% when the use of refrigeration capacity was not increased.

Save power and money, or increase refrigerated space by using these machines. For ample assurance of these benefits write for information on users' experience and for Niagara Bulletins 83, 91 and 95. Dept. AC-64.

NIAGARA BLOWER COMPANY
General Sales Office: 6 E. 45th Street, New York City
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District Engineers in Principal Cities

NIAGARA

EQUIPMENT FOR FOOD INDUSTRIES: AIR CONDITIONERS, DEHYDRATORS, COOLERS, "NO-FROST" METHOD OF PRE-COOLING, FREEZING AND HOLDING, AERO HEAT EXCHANGERS, "DUO-PASS" AERO CONDENSERS

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Исполнений
(IN RUSSIAN)

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(IN ENGLISH)

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PEAK PERFORMANCE

Sporlan CONTROLLED PERFORMANCE valves are the *only* thermostatic expansion valves with elements specifically charged to fit the application of the valve. These *selective charges* (G-K-U-Z-O-L-C) are designed to give the best operating characteristics for each type of installation. Only by using SPORLAN valves can you be assured of PEAK Performance on *EVERY* installation.

Sporlan manufactures Solenoid Valves . . . Magnetic Pilot Controls . . . Modulating Pilot Controls . . . Refrigerant Distributors and the only Thermostatic Expansion Valves with Selective Charges. If your post war plans include refrigeration or air-conditioning write SPORLAN immediately.

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Increasing Military Needs Slash Supplies of Radio Tubes & Parts for Civilians

WASHINGTON, D. C.—The reason radio repair shops and civilian owners of radios find difficulty in obtaining radio tubes and repair parts is that military demands for these items have increased, WPB said last week.

Manufacturing output is now over 10 times what it was before the war, and a certain portion of this is for civilian tubes and repair parts. While the War Production Board has prohibited the manufacture of any new civilian radio sets, it is fully aware of the need for keeping in operation the sets in homes, insofar as this is possible and consistent with the needs of our combat services, WPB said.

Repair shop operators have difficulty in obtaining certain essential repair parts, such as capacitors, transformers and resistors, because most of these are made in critical labor areas by plants that are loaded to capacity with war orders, the agency said. As many as possible of such products are diverted for repairing civilian radios, but not enough can be made to fill both war and civilian needs.

Some repair shops ask for a high preference rating, such as AA-1, to obtain these hard-to-get repair parts, because some wholesalers ask them for such a rating, but such ratings are reserved primarily for military uses and are not available to civilian repair shops, WPB said.

These civilian repair shops are denied the use of their AA-3 rating

assigned by Controlled Materials Plan Regulation 9A to buy capacitors, microphones and loudspeakers, resistors (including volume controls and variable resistors as well as fixed resistors), transformers, and tubes, in order that these hard-to-get items may be distributed as equitably as possible by manufacturers to distributors, and by the latter to dealers and repair shops. Repairmen, in attempting to obtain their fair share of repair parts, should find it to their advantage to keep in close touch with their principal sources of supply, WPB said, and some shopping around may also be advisable.

Radio receiving tubes now being manufactured are allocated for various uses. All tubes released by the manufacturers for civilian replacement purposes are marked "MR" for maintenance and repair. Preference ratings are no longer being assigned for the purchase of replacement tubes, as under the terms of Order L-265 these tubes may not be sold on an order bearing a preference rating.

Manufacturers distribute them as equitably as possible to their distribution agencies, and the latter to dealers and repair shops, WPB said. Tubes released for military and essential industrial purposes are obtainable only on highly rated purchase orders, usually AA-1.

While production of "MR" tubes is at the rate of about 18,000,000 annually, this is considerably below

the number needed to maintain all civilian radio sets in operation. Nothing much can be done about this until the demands of our combat services fall off considerably, as the factories simply cannot turn out enough. As in the case of repair parts, to obtain their share of "MR" tubes, repair shops should keep in close touch with their principal sources of supply, WPB said.

Radio repairmen may use "MR" tubes as replacements in sets needing them; and they may be sold over the counter to a consumer on a tube-for-tube basis, or on his certification as prescribed in WPB Order L-265, that he needs them for the operation of his radio set. But these tubes should not be sold to a consumer who wants them for spare tubes, WPB said.

A repairman who needs tools or equipment that requires a rating or a special application should apply in person or by letter to the nearest War Production Board field office for assistance, WPB said. There are over 100 of these in the United States.

Copies of CMP Regulation 9A, which assigns an allotment symbol to purchase copper wire and certain kinds of copper, steel, and aluminum, are available to repairmen. CMP Regulation 9A also provides that an AA-3 rating may be used by service men to obtain other materials and items that require a rating, such as miscellaneous hardware, dial cords, sockets, adaptors, etc. Copies of Order L-265, which governs the distribution and sale of radio tubes and accessories, also are available. Copies of these two documents may be obtained from any WPB field office, or from the War Production Board, Washington 25, D. C.

Chromate Treatment of Brine Systems Cuts Corrosion and Pitting to 10% Of Former Rate, Darrin Tells A.S.R.E.

PITTSBURGH—Corrosion and pitting have been cut to about 10% of what they might have been without chromate treatment of brines, declared Marc Darrin of Mutual Chemical Co. of America in speaking before the semi-annual meeting of the A.S.R.E. on "Chromate Corrosion Inhibitors in Brine Systems."

The American Society of Refrigerating Engineers recommended the use of 100 lb. sodium bichromate ($Na_2Cr_2O_7 \cdot 2H_2O$) per 1,000 cu. ft. of calcium brine, or 200 lb. for sodium brine. The alkalinity of the brine is adjusted to pH 7.0 to 8.5 by addition of caustic soda—about 27 lb. per 100 lb. bichromate. The precise amount of caustic depends on the nature of the brine and water. Sufficient should be added to produce a faint pink color with phenolphthalein (about pH 8.3).

HIGHER CONCENTRATIONS USED

Present practice of several eastern ice plants is to use a little higher chromate concentration for calcium brine, namely, 125 lb. bichromate per 1,000 cu. ft. (about 2,000 ppm); for sodium brine they employ the proportions originally suggested by the A.S.R.E. Sufficient caustic soda is added to adjust the pH 7.0 to 7.5. This treatment has been in use for a number of years, and has been found to keep the cans, steel work, and pipe work in the brine systems in almost perfect condition.

In an all-galvanized calcium brine system no important improvement resulted from increasing the chromate concentration above 500 ppm. In practice larger proportions may be desirable as a factor of safety to compensate for accidental losses, overflow, and drag-out, or because of stray currents or the presence of dissimilar metals, or due to unusual acidity, alkalinity, or other individual conditions.

USE IN ALL-IRON SYSTEMS

Others have shown that about the same chromate concentration is sufficient for an all-iron calcium brine system. Detailed data are not available for brine systems containing galvanized metal in contact with bare iron, but this bimetallic system may not be particularly harmful providing the exposed iron areas are not excessive. If metals such as brass are unavoidably exposed, the highest practical concentration of chromate should be used.

Although too high alkalinity may cause an undesirable precipitate to form in some brines, and a pH

higher than 8.5 is not suggested without individual trial, all brines are less corrosive when their pH is well on the alkaline side (pH 8.5 to 9.5). Zinc is not harmed by alkalinites below pH 10.0, and its corrosion resistance, as well as that of iron increases up to this pH. Above pH 10.0 there is danger of rapid solution of zinc in sodium brine. The customary harmful effect of aeration does not exist when chromates are present.

LIFE OF CHROMATE

Data indicate that under plant conditions the half-life of the chromate content of a calcium brine system, using about 100 lb. bichromate per 1,000 cu. ft. of brine, is 14 months, or a total consumption of 21.5 lb. every six-month period. With a lower concentration it is probable that the chemical consumption in protecting the metal would be about the same and that the saving would be chiefly in less mechanical loss. Insufficient data are available to apportion total consumption between chemical consumption and mechanical loss.

Disregarding the latter, it would be necessary to start with about 50 lb. bichromate per 1,000 cu. ft. in order to maintain a minimum concentration at the end of a six-month period of 30 lb. per 1,000 cu. ft. (about 500 ppm). The semi-annual addition would be something less than 20 lb. bichromate per 1,000 cu. ft. of calcium brine.

CONSUMPTION LESS WITH SODIUM

With sodium brine the actual consumption of bichromate is less than with calcium brine, although the optimum concentration of bichromate for sodium brine is about twice that required for calcium brine. In making up sodium brine, about 80 lb. bichromate per 1,000 cu. ft. should prove ample to maintain a minimum concentration of 60 lb. per 1,000 cu. ft. (about 1,000 ppm); and the semi-annual addition of bichromate should be less than for calcium brine—disregarding mechanical losses.

Chromate treatment was found effective for inhibiting the corrosion of aluminum-iron systems, and for preventing the dezincification of brass in ammonia-containing brine. Sodium silicate was found to have little effect in chromated brine. Chromic acid was about as effective as its bichromate equivalent. Interesting results were obtained with zinc chromate inhibitors.



Aluminum helps use or lose it

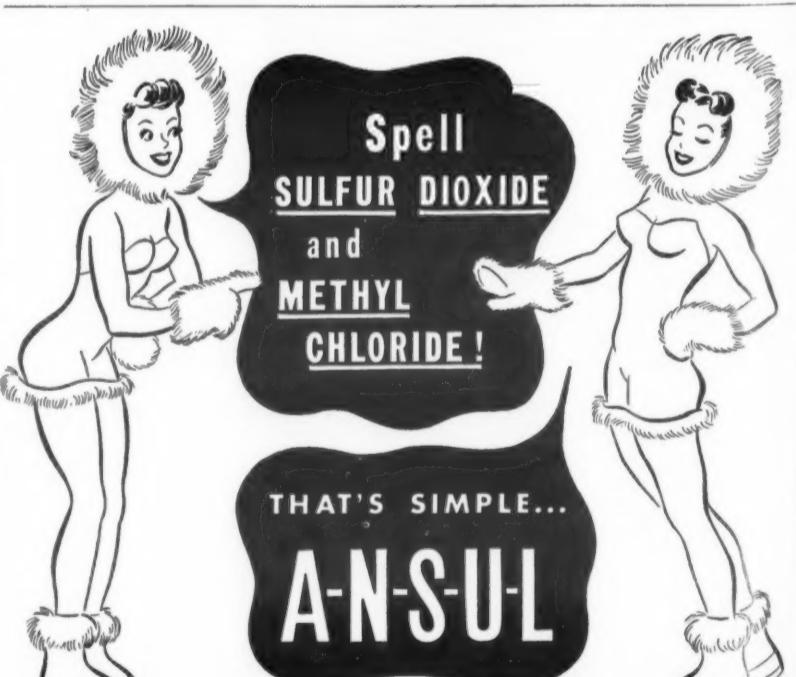


Heat aluminum at one spot and it's soon hot all over; this metal's such an excellent conductor of heat. Manufacturers of appliances take advantage of this property of aluminum to insure uniform heating, where they're employing heat, or to dissipate it, where heat isn't wanted.

The aluminum flatiron sole plate is a highly efficient worker of the first class. You get quick, even heating without hot spots. Refrigerator ice cube trays and grids carry heat away rapidly, giving faster freezing.

This property of aluminum has proved extremely valuable in such wartime products as intercoolers and oil coolers on airplanes, superchargers on Diesels and heat exchangers in processing equipment. The ability of aluminum to speed dissipation of heat led to its early adoption for automotive and airplane engine pistons and cylinder heads.

Postwar planners are incorporating aluminum in their designs for these same reasons. They are also planning to profit by improved and simplified methods of assembling aluminum alloys, that are coming out of the war. Alcoa engineers will help you do likewise. ALUMINUM COMPANY OF AMERICA, 1975 Gulf Bldg., Pittsburgh 19, Pennsylvania.



ANSUL CHEMICAL COMPANY
MARINETTE, WISCONSIN
Agents for Kinetics' FREON-12*

ALCOA ALUMINUM



AC 1-44

Norge Prepares for Big Export Trade

DETROIT—Indications that the United States will engage in foreign trade after the war on a scale never before imagined were given further substantiation by the announcement that Norge Division of Borg-Warner Corp. is receiving a flood of sales inquiries from various parts of the world, regarding prospects for large scale shipments of household appliances immediately after the war.

Roy W. Gifford, vice president of the division, said that many of the inquiries have come particularly from Northern Africa and the Mediterranean area, the Middle East, and Australia.

"Australia formerly was closed to us because of prohibitive tariffs but

we now have reason to believe that this condition may be changed somewhat, and that continent should be a big market for our products after the war," Mr. Gifford said.

Mr. Gifford revealed that various foreign distributors for Norge recently visited the division's Detroit plants to discuss the possibility of postwar shipments urgently needed in the foreign countries. These visitors included: Edgar Miller of A. E. Hickman, Ltd., of St. Johns, Newfoundland; D. Cisneros of D. Cisneros & Co., Caracas, Venezuela; J. F. Salidiva, Norge distributor in Barquisimeto, Venezuela; I. Garza Sada of Aparatos, Domesticos, Monterrey, Mexico; Marcos Leizgold & Co., Santiago, Chile, and Mr. Roach of Poliack & Co., South Africa. Many others are expected within the next few months, including Albert Gildred, distributor in Lima, Peru, and Ricardo Ample, distributor in Nicaragua.

Stove Industry Requests Permission From Gov't To Handle Own Rationing

(Concluded from Page 1, Column 4) which now controls distribution of domestic electric ranges, should be substituted for rationing of domestic cooking appliances and heating stoves. Under this system the customer must certify to the dealer that the stove is actually needed before purchase can be made. It was pointed out that domestic electric ranges are in even shorter supply than those stoves now under rationing restrictions, yet the personal certification method is being used to distribute such equipment.

Mr. Elliott asked committee members if they believed that production would be sufficient to take care of the backlog of orders that would appear if rationing were removed. The members said that inventories of most items are large and that these inventories coupled with present production of stoves should be sufficient to meet essential demands.

The committee also discussed the new policy controlling the allocation of materials for cooking appliances and heating stoves. It was explained that additional allocations of materials have been provided to make more substantial models of cooking and heating equipment provided that production during the third quarter is no more than unit production during the second quarter.

OBJECTIONS TO PLAN

Committee members objected to this provision on the ground that the second quarter is not a fair period from which to judge production since for various reasons production fell off during that period. Among other reasons advanced were that production lagged because manufacturers had difficulty in obtaining shipments of steel, and confusion resulted from talk about the possibility of changing from Victory models to standard models. The fact that Group A manufacturers were given a share of materials for producing stoves for civilian requirements during the second quarter and the subsequent delay in converting their facilities also contributed to the production slump during that period, committee members pointed out.

UNUSED MATERIAL ALLOTMENTS

Harry J. Holbrook, government presiding officer at the meeting, reminded the committee of the importance of notifying the Plumbing and Heating Division of unused material allotments in time for the material to be allotted to other manufacturers who are in a position to use it. The suggestion was made and the committee agreed that when manufacturers make CMP-4B application for materials they should indicate how many of each model and each type of stove they believe they will be able to make during the quarter. The Plumbing and Heating Division will then allocate material according to need and available material.

If, during the quarter, a manufacturer finds that he will not be able to use all of the material allotted to him, he will return what he can't use just as soon as possible so that the material can be allocated to other producers during the quarter.

POLICY ON PRODUCTION

The present policy regarding resumptions or expansions of production in Groups 1 and 2 labor areas was explained to the committee. The policy stipulates:

1. That resumptions or expansions of production may be authorized for Group 1 labor areas only after clearance and approval by the Area Production Urgency Committee. Where no such committee exists, approval by the Executive Vice Chairman is required.

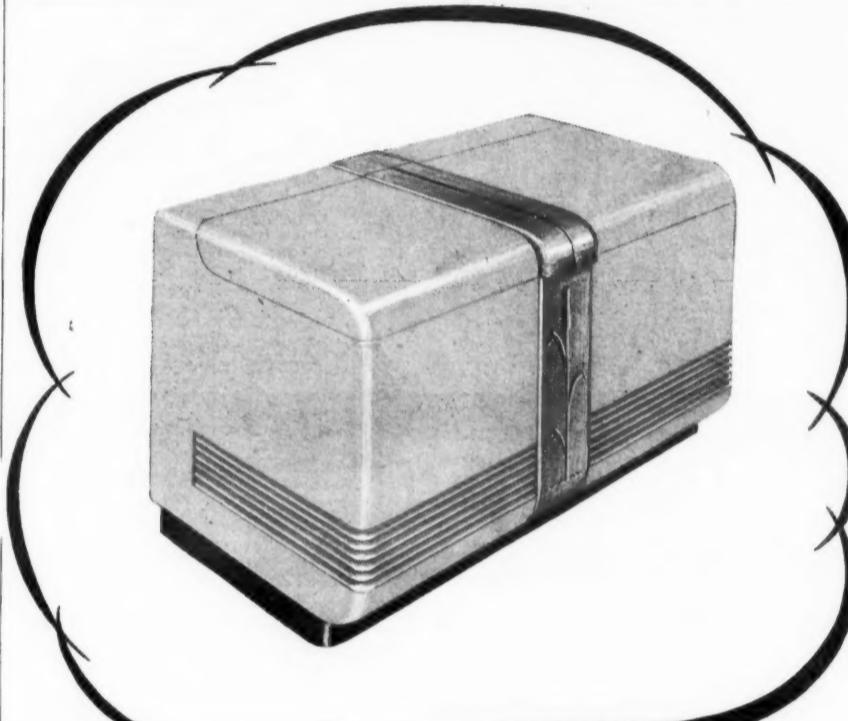
2. That these limitations shall not apply to plants whose total employment, after the proposed production increases have been effected, will not exceed (a) 50 persons in the critical West Coast labor areas of San Diego, Los Angeles, San Francisco, Portland, and Seattle, or (b) 100 persons elsewhere in the United States.

The Plumbing and Heating Division's labor adviser, Charles Holloman, told committee members that Local Selective Service Board Memo No. 115 as amended May 12, 1944, outlines the present procedure to obtain deferments in various age brackets. Copies of this memorandum may be obtained from local or State

In New Sales Post



B. D. BERK
Has been appointed zone manager for Lynch Mfg. Co. and will head sales in eight midwestern states.



**In the
"Post-War Plans"
of many
Farm Families--**

The BEN-HUR Farm Locker Plant

Talk to any farmer about a farm locker plant and his first comment will be, "wish we had it now." And he'll follow with the promise that food freezing and frozen storage is the FIRST thing he's going to add after the war.

For most farmers already know the benefits of owning a BEN-HUR FARM LOCKER PLANT . . . the advantages of freezing and storing farm-grown vegetables, meat, poultry for delicious meal variety weeks and months later . . . the economy and

savings in food costs . . . the satisfaction of preserving the finest of their own produce . . . the time saved in avoiding shopping trips to town.

This is evidence of your future market for new BEN-HUR FARM LOCKER PLANTS—a volume market ready just as soon as they can be produced.

Let us put your name on the list to receive complete data and sales information on BEN-HUR FARM LOCKER PLANTS, when this data can be released.

Today . . . back our fighting men with more war bonds



ARMY-NAVY "E"
Awarded Ben-Hur
for outstanding
achievement in
War Production.

BEN-HUR MANUFACTURING CO.
634 EAST KEEFE AVE. - MILWAUKEE 12, WISCONSIN

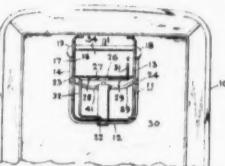
Remember . . .

BEN-HUR FARM LOCKER PLANTS

PATENTS

Weeks of May 16 & 23

2,348,784. REFRIGERATION APPARATUS. Carl Buhler, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application June 23, 1942, Serial No. 448,088. 6 Claims. (Cl. 62-1.)

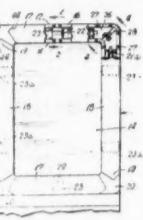


1. In a cooling unit having refrigerant passages therein, a chamber adapted to be heated, at least one duct communicating with said chamber and said passages, said chamber and passages being adapted to contain a refrigerant liquid, said duct and chamber being so located with respect to said passages that when said chamber is heated, warm refrigerant liquid will circulate through said chamber and only a portion of the refrigerant passages of the cooling unit, whereby frost which may have accumulated on said cooling unit, is melted substantially only from the portion of the cooling unit containing the passages through which the warm refrigerant liquid form the chamber is circulated.

2,348,812. REFRIGERATOR CABINET. Dudley E. Heath, New York, N. Y., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application May 16, 1940, Serial No. 335,450. 6 Claims. (Cl. 220-9.)

6. In a refrigerator cabinet comprising inner and outer liners with a gap therebetween, spacing members extending across the gap between the liners, a breaker strip having a plurality of sections and corner members between and abutting the ends of the sections to provide a continuous strip overlying the gap between the inner and outer liners, said

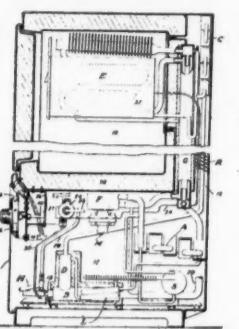
sections and spacing members having interlocking detents inclined at an acute angle to the plane of the sections and engaged by relative sliding movement therebetween in a predetermined path of movement in one direction, the abutting ends of each of the sections and corner members being provided with interlocking portions having surfaces extending transversely across the path of movement of the section in the opposite direction to prevent movement of the section out of operative position, interlocking shoulders on the corner members and cabinet engageable upon movement normal to the plane of the members, a latch keeper extending rearwardly from each corner



member, and resilient latches on the cabinet engaged with the keepers on the end members to yieldingly hold the interlocking shoulders on the members and cabinet in engagement, said latches being engaged with the keepers by a combined lateral and vertical sliding movement of the corner members into abutting engagement with the ends of adjacent sections whereby the corner members and sections are locked in position on the cabinet by sliding the corner members into position between the ends of the sections.

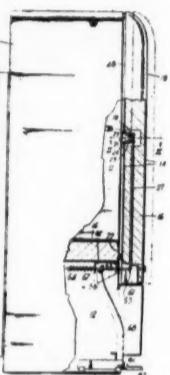
2,348,860. REFRIGERATION. Arnold D. Siedle, Cleveland Heights, Ohio, assignor to The Hoover Co., North Canton, Ohio. Application June 25, 1941, Serial No. 399,631. 16 Claims. (Cl. 62-5.)

1. In a gas operated refrigerator of the type having a cabinet with an upper food storage compartment and a lower apparatus compartment with a front closure therefor, a gas-fired refrigerator associated therewith having the gas burner therefor positioned in the apparatus compartment, an adjustable control for the gas supplied to the burner and an axially movable manually operated member for



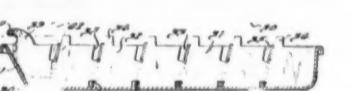
adjusting the control, that improvement which consists in positioning the adjustable control for the gas supply in the apparatus compartment adjacent to the gas burner with the manually operated member directly connected thereto and positioned to be readily accessible from the exterior of the closure member for the apparatus compartment and releasable means associated with the manually operated member and releasable by axial movement thereof to prevent casual operation thereof.

2,348,955. DOOR LATCH MECHANISM. Leslie B. M. Buchanan, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Jan. 8, 1942, Serial No. 425,954. 3 Claims. (Cl. 292-255.)



1. In a door and a jamb therefor, a latching and door-opening device for said door, said device comprising a latch bolt on said door, a keeper for said latch bolt, said keeper being secured to the door jamb, said latch being adapted for movement to a keeper-engaging position and a keeper-releasing position, means for biasing said latch bolt to the keeper-engaging position, a push plate on said door adapted for limited movement in the general direction in which the portion of the door adjacent to the push plate moves during the initial opening movement of the door, an operative connection between the latch bolt and the push plate to move said latch bolt to the keeper-releasing position when the push plate is moved in said direction, and means for pushing said push plate in said direction to move said latch bolt to the keeper-releasing position and thereafter push said door from its closed position adjacent the door jamb.

2,348,956. ICE TRAY. Clifford R. Carney, Detroit, Mich., assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Dec. 18, 1939, Serial No. 309,742. 5 Claims. (Cl. 62-108.5.)

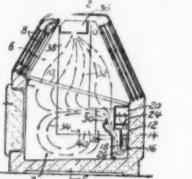


4. An ice tray grid comprising a longitudinally extending partition having a series of notches therein spaced along its length, a series of cross partitions extending across said first partition and loosely arranged in said notches in such manner that each cross partition may be moved relative to said first partition to facilitate the loosening of bonded ice from the grid, said first partition having an upward projection located closely adjacent the upper margin of each of said cross partitions, and a detached prying tool manually actuatable at separate operations thereof to selectively pry against and move an individual cross partition relative to said first partition, said prying tool having a portion adapted to partially embrace and fulcrum directly upon that projection closely adjacent the particular cross partition selected for movement at any one operation of said tool.

2,348,988. REFRIGERATED CASE. Floyd C. Lowell, Trenton, N. J., assignor to C. V. Hill & Co., Inc., Trenton, N. J., a corporation of New Jersey. Application Feb. 5, 1942, Serial No. 429,589. 6 Claims. (Cl. 62-89.5.)

1. A refrigerated display case having a lower storage chamber, an upper display chamber, article supporting means ex-

tending in a generally horizontal direction between the storage and display chambers and provided with openings for the circulation of air upward from the storage chamber to the display chamber, a downwardly opening housing in the storage chamber forming a refrigerating chamber, downwardly through the refrigerating chamber a refrigerating coil lo-



shel, an insulated breaker strip bridging the space between said shells and having one edge thereof received in said pocket, a thin metallic strip covering the outer face of the breaker strip and extending around the edges thereof, said metal strip on the outer face of the breaker strip contacting the front wall of the pocket and having a resilient extended portion formed thereon extending along the rear face of the breaker strip and engaging the rear wall of the pocket and frictionally securing the breaker strip and metal covering in said pocket, and means for connecting the opposite edge of the breaker strip to the other shell.

2,349,420. REFRIGERATING APPARATUS. Martin J. Gouloose, Grand Rapids, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. (Concluded on Page 31, Column 3.)



CHICAGO SEAL CO. 20 North Wacker Dr., Chicago



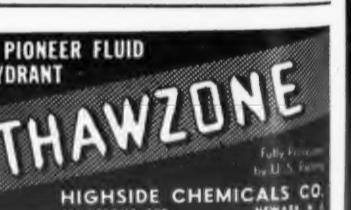
Curtis Refrigerating Machine Division of Curtis Manufacturing Company 1912 Kienlen Ave. St. Louis, Mo.



JAS. P. MARSH CORPORATION 2067 Southport Ave., Chicago, Ill.



VALLEY REFRIGERATION SERVICE, P. O. Box 572, Harrisonburg, Va.



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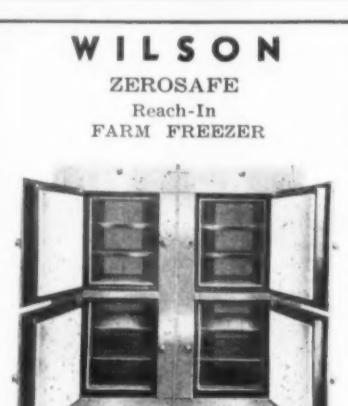
Solder connections machined directly in valve body. Has patented rotating self-aligning stem-disc. Resilient packing.

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• WALK-IN ZEROVAULTS & REACH-IN ZEROSAFES FOR STORING & DISPENSING FROZEN FOODS

• NORMAL TEMPERATURE WALK-INS & REACH-INS

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2,349,419. REFRIGERATING APPARATUS. Martin J. Gouloose, Grand Rapids, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application July 28, 1941, Serial No. 404,721. 1 Claim. (Cl. 62-1.)

In a generally horizontal direction between the storage and display chambers and provided with openings for the circulation of air upward from the storage chamber to the display chamber, a downwardly opening housing in the storage chamber forming a refrigerating chamber, downwardly through the refrigerating chamber a refrigerating coil lo-

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SALES PROMOTION man wanted. Large mid-western electric utility wants a Sales Promotion man experienced in the preparation of sales manuals, chart talks, and sales training. A knowledge of electrical merchandising will be helpful. Height, general appearance, and public speaking ability must be above average. Maximum age 40. Splendid opportunity for the right man. In reply state age, training, experience, general qualifications, and salary expected. Box 1567, Air Conditioning & Refrigeration News.

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POSITION OPEN for a live Cost Accountant in a lively machinery manufacturing concern with 1,000 employees. Involves several products under simultaneous production; gray iron foundry operation; only experienced persons need apply. Good permanent connection for the right man. Box 1571, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICEMAN for permanent position in Florida. Good salary and car allowance. Write at once, giving all details of experience and references. U. S. E. S. referral card necessary. Good opportunity for advancement. Box 1574, Air Conditioning & Refrigeration News.

SOUTHERN CALIFORNIA'S largest valve and fittings manufacturer has an opening for a refrigeration sales engineer with ten years experience in commercial refrigeration (preferably with some engineering background). Real opportunity and permanent connection for right party. Give all details and experience in reply. Box 1569, Air Conditioning & Refrigeration News.

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MECHANICAL DRAFTSMEN. A large internationally known Machinery Manufacturer requires the services of Mechanical Draftsmen in Engineering Division. These men must be conversant with Air Conditioning and Refrigeration equipment. Metal Construction Electrical Control Wiring. Positions offer permanency with opportunity afforded by an expanding operation. Write stating qualifications, age, nationality. All replies will be held strictly confidential. Box 1576, Air Conditioning & Refrigeration News.

POSITIONS WANTED
EXPERIENCED PRACTICAL refrigeration engineer. Eight years with large

commercial refrigeration and air conditioning manufacturer. Also experienced sales manager. Desires position as assistant engineer or sales manager or engineer. Good references. Draft exempt. Box 1573, Air Conditioning & Refrigeration News.

SERVICE MAN, 34 years old, 14 years practical experience installing, servicing all types of commercial equipment. Now employed as Service Manager. Prefer Southern, Eastern, or Central states. Would consider working large territory. Best of references. State salary, working conditions, etc. Box 1568, Air Conditioning & Refrigeration News.

SERVICE ENGINEER. Experienced on all major appliances, desires connection as service manager or shop superintendent. Would also consider position of field service representative for responsible manufacturer or a position of responsibility with a supply jobber. Minimum starting salary \$300.00 per month with opportunity for advancement. Box 1572, Air Conditioning & Refrigeration News.

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USED EQUIPMENT WANTED: Air conditioning and refrigeration systems and machinery including self-contained units, coils, high-sides, shell and tube coolers and controls. Highest cash for large sizes. We urgently need two 15 HP motors and two compressors without condensers. E. M. FAIRBANKS CO., 475 Fifth Ave., New York 17, N. Y.

AIR CONDITIONING equipment of all sizes including Evaporative Condensers where possible. Highest prices. J. E. HEYMAN, 251 W. 98th St., New York 25, New York.

EQUIPMENT FOR SALE

FOR SALE 200 Frigidaire Model "O" $\frac{1}{2}$ -hp. \$65. 300 Frigidaire Model "K" $\frac{1}{2}$ -hp. \$35. 200 Kelvinator Model 5562 $\frac{1}{2}$ -hp. \$42.50. 2, 4, 6 hole converted ice cream cabinet. All units are in running condition, air cooled with 60 cycle 110-220 volt motors. All orders F.O.B. New York. 25% deposit with order. Send for surplus stock catalog. EDISON COOLING CORP., 310 E. 149th St., New York, N. Y.

DRY BOTTLE COOLERS. ELECTRIC. Equipped with vending machine, blower coil, and self-contained $\frac{1}{4}$ H.P. Universal Cooler Corporation unit ready to plug in. Brand new. Streamlined. No priority required. Price \$132.50 net. GENERAL REFRIGERATOR COMPANY, 5400 Eadom St., Philadelphia, Pa.

FOOD FREEZERS, rebuilt and guaranteed. Immediate shipment. Write for illustrated circular and price list. EQUIPMENT SALES CO., 3915-23 Market St., Philadelphia 4, Pa.

BEER COOLERS direct draw dispensing cabinets for 2 half barrels. Brand new. Complete with faucets and fittings. \$325.00 F.O.B. Philadelphia, Pa. Milk Coolers 4 and 6 can capacity. Complete self-contained with General Electric condensing units. Call Rittenhouse 6359 or write, JORDAN REFRIGERATOR COMPANY, 235-37 N. Broad St., Philadelphia 7, Pa.

DRY BOTTLE COOLERS. Electric. Equipped with vending machine, blower coil, and self-contained $\frac{1}{4}$ H.P. Universal compressor ready to plug in. Brand new. Streamlined. No priority required. Vending machine easily removed, increasing capacity to 100 bottles. Only a few left. Price \$132.50 net. GENERAL REFRIGERATOR COMPANY, 860 North Broad Street, Philadelphia, Pa.

FOR SALE. In original crate $\frac{1}{2}$ H.P. General Electric air cooled compressor and General Electric 9.000 B.t.u. unit cooler. 230 V. DC motor. \$348.00, f.o.b. Houston, Texas—SDBL. Box 8066, Houston 4, Texas.

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3 H.P. and 5 H.P. Brand New water cooled condensing units complete with motors and starters. Reasonable. EVERLAST, 444 Fourth Ave., New York City.

FOUR Air Conditioning Blowers complete with coils and 3 H.P. electric motor-blower, housing, expansion valves, etc. capacity approximately 30 tons—York—practically new. Reasonable. EVERLAST, 444 Fourth Ave., New York City.

MILK COOLERS with General Electric Condensing Units. The last of this season's stock. Four can models only—double or single row equipped with $\frac{1}{2}$ H.P. G-E. All new guaranteed equipment. Immediate delivery. Prices right. Write or wire today. RAMSEY-BENNETT COMPANY, 727 Bolivar Rd., Cleveland 15, Ohio.

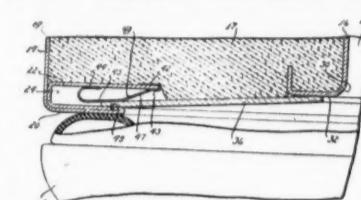
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Patents (Cont.)

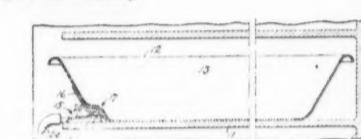
(Concluded from Page 30, Column 5)
Application Oct. 16, 1941, Serial No. 415, 137. 2 Claims. (Cl. 230—3)

2. In a cabinet construction, the combination of inner and outer shells having heat insulation therebetween and being provided with a door opening, said shells having edge portions bent inwardly toward each other, the edge portion of one of the shells being bent to form a pocket opening toward the edge portion of the other shell, said pocket having inner and outer walls, a breaker strip bridging the space between the two shells and adapted to engage the inwardly extending portions thereof, said breaker strip having one edge thereof received in the pocket of one of the shells and having the outer surface thereof beveled and adapted to be held in engagement with the outer wall of said pocket, and a resilient member in said pocket having



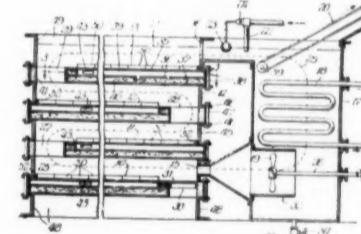
one end thereof provided with a loop for encompassing the edge of the inner wall thereof, and the opposite end of said member extending into the pocket and formed in a resilient loop of a size to substantially traverse the pocket, said loop being in engagement with the inner wall of the pocket and inner surface of the breaker strip for pressing the breaker strip against the outer wall of the pocket and thereby holding the breaker strip in contact with the inwardly extending portions of both shells.

3,349,695. ICE TRAY. Robert Lay Hallcock, Larchmont, N. Y. Application Oct. 24, 1940, Serial No. 362,553. 7 Claims. (Cl. 62—108.5.)



7. The combination with a cooling element having a shelf or support, of a tray body adapted to rest on said support and having a side wall dished inward to form a pocket in the exterior surface thereof, which pocket has a wall portion substantially horizontal and spaced from said support, a part secured to said tray body in the vicinity of said pocket, and a turnable member carried by said part, said elements being so constructed and arranged that said member is operable to produce a separating force between said substantially horizontal wall portion and said support while exerting a substantially zero force of action or reaction on said part.

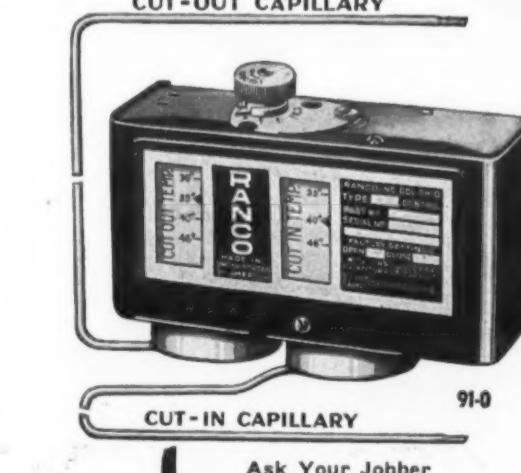
2,349,451. FREEZING OF LIQUIDS. William H. Motz, Oak Park, Ill. Application Nov. 26, 1940, Serial No. 367,275. 10 Claims. (Cl. 62—105.)



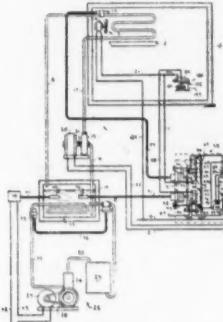
1. In an apparatus of the character described, a plurality of upwardly opening cellular freezing beds arranged one above another in generally horizontal positions, means for causing a stream of liquid to be frozen to flow across each of the beds in succession, means for reducing the temperature of the beds to freeze the liquid in the cells, and means for raising the temperature of the beds to liberate the frozen shapes from the cells into the moving stream, said apparatus being so constructed and arranged as to utilize the moving stream to carry off the frozen shapes from all of the beds to a common point of discharge.

2,349,671. CONTROL OF REFRIGERATION. Alwin B. Newton, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Dec. 23, 1940, Serial No. 371,352. 17 Claims. (Cl. 62—6.)

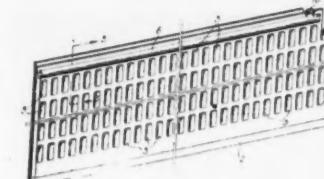
CUT-OUT CAPILLARY



15. A system of the character described comprising in combination, a space to be cooled, a cooling coil for cooling said space, means conducting cooling fluid to



Application June 23, 1942, Serial No. 448,108. 4 Claims. (Cl. 62—126.)



1. A plate evaporator comprising two quadrilateral flat metal sheets secured together in face to face relation, at least one of said sheets being embossed to provide a suction header between said sheets extending adjacent and along one edge of said evaporator, and at least one of said sheets being embossed to provide between the sheets a first group of relatively narrow elongated straight refrigerant passages extending in spaced parallel relation substantially perpendicular to the said suction header and communicating therewith and a second group of relatively narrow elongated straight refrigerant passages extending in spaced parallel relation substantially parallel to said suction header and intersecting the passages of said first group, the cross-sectional contour of each passage of both groups having its greatest dimension in a longitudinal median plane of the passage and diminishing at opposite sides of said plane toward opposite edges respectively of the passage and the cross-sectional areas of said passages being substantially less than the cross-sectional area of said suction header, and a refrigerant inlet to said passages independent of the suction header.



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★ HOWARD DAVIS, Director of Purchases, has kept the flow of raw materials coming into Tyler plants to carry on steady deliveries of war products through this period. Later on, Howie will buy the finest raw materials possible for the great Tyler line of post-war commercial refrigerators. A good product must have quality materials as well as the finest design and craftsmanship. That's TYLER!

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Merchandising Head

RALPH C. CAMERON

**Cameron Will Direct
Airtemp Merchandising**

DAYTON, Ohio—Ralph C. Cameron has been appointed director of merchandising for Airtemp Division, Chrysler Corp., announces Paul B. Zimmerman, vice president and general sales manager. Mr. Cameron will continue to direct postwar planning activities of the company.

The newly created position will place all advertising, sales promotion, and sales training activities of the division under the supervision of Mr. Cameron for the purpose of providing coordinated sales campaigns, sales training, promotional programs, and advertising for each of the Airtemp lines of air conditioning, commercial refrigeration, and automatic residential heating.

V. P. Black will continue as advertising manager, W. H. Knowlton, sales promotion manager, and Paul H. Dow will be in charge of sales training.

**Amendment Clarifies
MRO Procedure**

WASHINGTON, D. C.—Rules governing the use of the maintenance, repair, and operating supplies (MRO) procedure for obtaining minor capital additions have been clarified by the issuance of an amended interpretation, WPB announced May 27.

The MRO procedure may be used to obtain materials and equipment for minor capital additions where the cost of such addition does not exceed \$500, excluding the purchaser's cost of labor. This is provided for in CMP Regulation No. 5.

Interpretation No. 11, as amended May 22, 1944, to CMP Regulation No. 5, points out that all labor costs involved in the manufacture of the material or equipment must be included in figuring the cost of an addition. On the other hand, the cost of labor used in construction or installation of a minor capital addition need not be included in figuring the cost.

The interpretation also points out that this rule applies whether the owner of the plant uses his own employees to do the construction or installation work or hires an independent contractor to supply labor for the construction or installation. It also applies where the owner of the plant gets an independent contractor to furnish the materials and labor for the job, and where the owner of plant buys a machine or other article and has the seller do the work of installation.

The same general rules apply to determining the cost of materials needed for installation or relocation of equipment, where such materials are brought under procedures established in Direction No. 15 to CMP Regulation No. 5. This direction permits acquisition of materials costing \$500 or less for the relocation of equipment which a manufacturer has in his plant.

**More Locker Materials
Urged by Senators**

(Concluded from Page 1, Column 5)
Sterling Smith, Chief, Refrigeration and Air Conditioning Section, WPB

John B. McGaugh, Chief, Facilities Bureau, WPB

Peter Bove, Rutland, Vt., representing locker operators.

**Sherwood Joins
Jos. Strauss Co.**

BUFFALO—Charles M. Sherwood, who recently resigned as branch chief in the Copper Division of the War Production Board, has been placed in charge of all wholesale activities of the Joseph Strauss Co., Inc. here, distributor of Gibson refrigerators, Bendix home laundries, Zenith radios, and other products, announces Luke Strauss, president.

Mr. Sherwood succeeds Edward T. Ball, who has been with Strauss for 29 years. Interested in radio for many years, Mr. Sherwood was an officer in the Coast Artillery Corps during the first World War.

After the war he became sales manager for Steelman, Inc. of New York City, a radio distributor.

**Westinghouse to Re-enter Home Radio
Manufacturing With Donley In Charge**

BALTIMORE, Md.—Return to production of home radio sets, which it dropped in 1928, is planned by Westinghouse Electric & Mfg. Co. as soon as possible, announces Walter Evans, vice president in charge of the radio division.

Heading the Westinghouse radio receiver division will be Harold B. Donley, said Mr. Evans. Before his new appointment Mr. Donley was general appliance manager for the Westinghouse Electric Supply Co., with headquarters in New York City.

Mr. Donley has been with Westinghouse for 22 years. In 1922 he joined the company's electrical appliance division in Mansfield, Ohio, his

home town. He was appointed in field contact man in 1927 and five years later he was named manager of heating appliance sales.

Since 1928 Westinghouse has been manufacturing radio equipment, but only for the Army, Navy, and broadcasting stations. During the war the company's production facilities have expanded greatly, and production figures have jumped 51 times over pre-war records, reveals Mr. Evans.

Rather than close down these expanded facilities the company intends to use them, as soon as war conditions permit, for the building of home radio receivers, including standard sets, frequency modulation, phono-

graph combinations, and ultimately television sets, said Mr. Evans.

"We feel that for several reasons the postwar period offers an unusual opportunity to return to such production," he added. "With the obsolescence and wearing out of a large portion of the approximately fifty million sets in use at the start of the war, the requirements of the public will place demands on the industry far above the pre-war volume."

"Further, in the period since radios were last built, there have been great technical improvements growing out of the war work, to which the public is entitled in postwar models," he pointed out.

Westinghouse holds many basic patents on radios and was one of the first manufacturers of home receiving sets following the introduction of scheduled radio programs by the company's pioneer station, KDKA, stated Mr. Evans.

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